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MINISTRY OF LABOUR & EMPLOYMENT

NOTIFICATION

New Delhi, the 24th October 1957

S.R.O. 3419.—In exercise of the powers conferred by section 57 of the Mines Act, 1952 (35 of 1952) and in supersession of the Indian Coal Mines Regulations, 1926, the Central Government hereby makes the following Regulations, the same having been previously published as required by sub-section (1) of section 59 of the said Act.

COAL MINES REGULATIONS, 1957

CHAPTER I—PRELIMINARY

1. **Short title, extent and application.**—These regulations may be called the Coal Mines Regulations, 1957.

(2) They extend to the whole of India except the State of Jammu and Kashmir.

(3) They shall apply to every coal mine.

2. **Definitions.**—In these regulations, unless there is anything repugnant in the subject or context—

- (1) "Act" means the Mines Act, 1952;
- (2) "approved safety lamp" and "approved electric torch" mean respectively, a safety lamp or an electric torch, manufactured by such firm and of such type as the Chief Inspector may from time to time specify by notification in the Official Gazette;
- (3) "Auxiliary fan" means a forcing fan or an exhausting fan, used below-ground wholly or mainly for ventilating a face or faces or blind ends;
- (4) "Banksman" means a person appointed to superintend the lowering and raising of persons, tools and materials and to transmit signals at the top of a shaft or incline;
- (5) "coal" includes anthracite, bituminous coal, lignite, peat and any other form of carbonaceous matter sold or marketed as coal;
- (6) "Committee" means a committee appointed under section 13 of the Act;
- (7) "Competent person" in relation to any work or any machinery plant or equipment means a person who has attained the age of 21 years and who has been duly appointed in writing by the manager as a person competent to supervise or perform that work, or to supervise

the operation of that machinery, plant or equipment, and who is responsible for the duties assigned to him, and includes a shotfirer;

- (8) "District Magistrate" in relation to any mine, means the District Magistrate or the Deputy Commissioner, as the case may be, who is vested with the executive powers of maintaining law and order in the revenue district in which the mine is situated: Provided that in the case of a mine which is situated partly in one district and partly in another, the District Magistrate for the purposes of these regulations shall be the District Magistrate authorised in this behalf by the Central Government;
- (9) "explosive" shall have the same meaning as is assigned to that term in the Indian Explosives Act, 1884;
- (10) "Face" means the moving front of any working place or the inbye end of any gallery, roadway or drift;
- (11) "Form" means a Form as set out in the First Schedule;
- (12) "gas" includes fume or vapour;
- (13) "Goaf" means any part of workings belowground wherefrom a pillar or part thereof, or in the case of "longwall" workings, coal has been extracted but which is not a working place;
- (14) "Incline" means an inclined passage or road either on the surface or belowground;
- (15) "Inset" means a landing or platform in a shaft, and includes an excavation therefrom between the top and the bottom of the shaft;
- (16) "machinery" means—
 - (i) any locomotive or any stationary or portable engine, air compressor, boiler or steam apparatus, which is, or
 - (ii) any such apparatus, appliance or combination of appliances intended for developing, storing, transmitting, converting or utilising energy, which is, or
 - (iii) any such apparatus, appliance or combination of appliances if any power developed, stored, transmitted, converted or utilised thereby is, used or intended for use in connection with mining operations;
- (17) "material" includes coal, stone, debris, or any other material;
- (18) "misfire" means the failure to explode of an entire charge of explosives in a shot-hole;
- (19) "month" means a calendar month;
- (20) "Official" means a person appointed in writing by the owner, agent or manager to perform duties of supervision in a mine or part thereof, and includes an undermanager or assistant manager, an overman, a sirdar, an engineer and a surveyor;
- (21) "Onsetter" means a person appointed to superintend the raising and lowering of persons, tools and materials and to transmit signals at any inset or shaft bottom;
- (22) "Overman" means a person possessing a Manager's or Overman's Certificate who is appointed by the manager in writing, under any designation whatsoever, to perform the duties of supervision or control in a mine or part thereof, and is as such superior to a sirdar;
- (23) "permitted explosive" means an explosive manufactured by such firm and of such type as the Chief Inspector may from time to time specify by notification in the Official Gazette;
- (24) "public road" means a road maintained for public use and under the jurisdiction of any Government or local authority;
- (25) "quarter" means a period of three months ending on the 31st March, 30th June, 30th September or 31st December;
- (26) "railway" means a railway as defined in the Indian Railways Act, 1890.

- (27) "Regional Inspector" means the Inspector of Mines in charge of the region or local area or areas in which the mine is situated or the group or class of mines to which the mine belongs, over which he exercises his powers under the Act;
- (28) "river" means any stream or current of water, whether seasonal or perennial, and includes its banks extending up to the highest known flood level;
- (29) "Roadway" means any part of a passage or gallery belowground which is maintained in connection with the working of a mine;
- (30) "Schedule" means a Schedule appended to these regulations;
- (31) "Shaft" means a way or opening leading from the surface to workings belowground or from one part of the workings belowground to another, in which a cage or other means of conveyance can travel freely suspended, with or without the use of guides;
- (32) "Tub" includes a wagon, car, truck or any other vehicle moving on rails for conveying material;
- (33) "Undermanager" or "Assistant Manager" means a person possessing a Manager's Certificate who is appointed in writing by the owner, agent or manager to assist the manager in the control, management and direction of the mine or part thereof, and who takes rank immediately below the manager, and is thus superior to an overman and a sirdar;
- (34) "Ventilating district" means such part of a mine belowground as has an independent intake airway commencing from a main intake airway, and an independent return airway terminating at a main return airway, and, in the case of a mine or part thereof which is ventilated by natural means, the whole mine or part; and
- (35) "working place" means any place in a mine to which any person has lawful access.

CHAPTER II—RETURNS, NOTICES AND RECORDS

3. Notice of Opening.—(1) The notice required by section 16 of the Act shall be submitted in Form I.

(2) When a mine has been opened, the owner, agent or manager shall forthwith communicate the actual date of opening to the Chief Inspector and to the Regional Inspector.

4. Monthly Returns.—On or before the 14th day of every month, the owner, agent or manager shall submit to the Chief Inspector and the Regional Inspector correct returns in respect of the preceding month in Form II.

5. Annual Returns.—(1) On or before the 20th day of February in every year, the owner, agent or manager shall submit to the District Magistrate and to the Chief Inspector annual returns in respect of the preceding year in Form III.

(2) If a mine is abandoned or working thereof is discontinued over a period exceeding 60 days or if a change occurs in the ownership of a mine, the returns required under sub-regulation (1) shall be submitted within 30 days of abandonment or change of ownership or within 90 days of discontinuance, as the case may be:

Provided that the Chief Inspector may, by an order in writing and subject to such conditions as he may specify therein, allow such returns to be submitted up to any date not later than the 20th day of February in the year following that to which they relate.

Provided further that nothing in this sub-regulation shall be deemed to authorise the submission of any return later than the 20th day of February in the year following that to which it relates.

6. Notice of abandonment or discontinuance.—(1) When it is intended to abandon a mine or seam or to discontinue working thereof for a period exceeding 60 days, the owner, agent or manager shall, not less than 40 days before such abandonment or discontinuance, give to the Chief Inspector and the Regional Inspector a notice stating the reasons for the proposed abandonment or discontinuance and the number of persons likely to be affected thereby:

Provided that when on account of unforeseen circumstances a mine is abandoned or discontinued before the notice under clause (a) has been given or when without previous intention the discontinuance extends beyond a period of 60 days, the notice shall be given forthwith.

(2) Notwithstanding anything contained in sub-regulation (1), when it is intended to abandon, or discontinue for more than 60 days, any workings below-ground over which is situated any property vested in the Government or any local authority or any railway or any building or permanent structure not belonging to the owner, the owner, agent or manager shall, not less than 30 days before the date of such abandonment or discontinuance, give notice of his intention to the Chief Inspector and the Regional Inspector.

(3) When a mine or seam has been abandoned, or the working thereof has been discontinued over a period exceeding 60 days, the owner, agent or manager shall, within seven days of the abandonment or of the expiry of the said period, give to the Chief Inspector, the Regional Inspector and the District Magistrate notice in Form I.

7. Notice of re-opening.—(1) When it is intended to reopen a mine or seam after abandonment or after discontinuance for a period exceeding 60 days, the owner, agent or manager shall, not less than 30 days before resumption of mining operations, give to the Chief Inspector, the Regional Inspector and the District Magistrate, notice in Form I.

(2) When a mine has been re-opened, the owner, agent or manager of the mine shall forthwith communicate the actual date of re-opening to the Chief Inspector and the Regional Inspector.

8. Change in ownership and addresses etc.—(1) (a) When a change occurs in the name or ownership of a mine or in the address of the owner, the owner, agent or manager shall, within seven days from the date of the change, give to the Chief Inspector and the Regional Inspector a notice in Form I:

Provided that where the owner of a mine is a member of a firm or other association of individuals, a change—

- (i) of any partner in the case of a firm;
- (ii) of any member in the case of an association;
- (iii) of any director in the case of a public company; or
- (iv) of any shareholder in the case of a private company;

shall also be intimated to the Chief Inspector and the Regional Inspector, within seven days from the date of the change.

(b) When the ownership of a mine is transferred, the previous owner or his agent shall make over to the new owner or his agent, within a period of seven days of the transfer of ownership, all plans, sections, reports, registers and other records maintained in pursuance of the Act, of these regulations, or orders made thereunder, and all correspondence relating to the working of the mine relevant thereto; and when the requirements of this clause have been duly complied with, both the previous and the new owners or their respective agents shall forthwith inform the Chief Inspector and the Regional Inspector in writing.

(2) When any appointment is made of an agent, manager, engineer, surveyor or an undermanager or assistant manager, or when the employment of any such person is terminated or any such person leaves the said employment, or when any change occurs in the address of any agent or manager, the owner, agent or manager shall, within seven days from the date of such appointment, termination or change, give to the Chief Inspector and the Regional Inspector a notice in Form I.

9. Notice of Accident.—(1) (a) When there occurs in or about a mine—

- (i) an accident causing loss of life or serious bodily injury in connection with mining operations;
- (ii) an explosion or ignition;
- (iii) a spontaneous heating or outbreak of fire, or appearance of smoke, or other indication of heating or outbreak of fire;
- (iv) an influx of noxious gases;

- (v) an occurrence of inflammable gas in a mine to which Regulation 144 does not apply;
- (vi) an irruption of water;
- (vii) an instantaneous failure of a pillar, part of a pillar or several pillars of coal (i.e., a 'bump') in workings belowground;
- (viii) a premature collapse of any part of the workings;
- (ix) any accident due to explosives;
- (x) a breakage or fracture of rope, chain, headgear, pulley or axle or bearing thereof, or other gear by which persons are lowered or raised;
- (xi) an overwinding of cages or other means of conveyance while men are being lowered or raised;
- (xii) a breakage or fracture of any essential part of winding engine, crank-shaft, coupling, bearing, gearing, clutch drum or drum shaft; or failure of emergency brake;
- (xiii) a bursting of any equipment containing steam, compressed air or other substance at high pressure; or
- (xiv) a breakage, fracture or failure of any essential part of any machine or apparatus whereby the safety of persons may be endangered;

the owner, agent or manager shall forthwith inform the Regional Inspector about the occurrence by telephone or express telegram or by special messenger; and shall also, within 24 hours of every such occurrence, give notice thereof in Form IV-A to the District Magistrate, the Chief Inspector and the Regional Inspector and in the case of an accident mentioned in sub-clause (i) of this clause, also to the Coal Mines Labour Welfare Commissioner. The owner, agent or manager shall simultaneously exhibit a copy of the notice on a special notice board outside the office of the mine and shall ensure that the notice is kept on the board in a legible condition for not less than 14 days from the date of such exhibition.

(b) When an accident causing loss of life or serious bodily injury occurs in or about a mine in connection with the generation, storage, transformation, transmission, supply or use of electrical energy, the owner, agent or manager shall also forthwith inform the Electrical Inspector of Mines by telephone, express telegram or special messenger.

(2) If death results from any injury already reported as serious under sub-regulation (1), the owner, agent or manager shall within 24 hours of his being informed of the death, give notice thereof to the District Magistrate, the Chief Inspector, the Regional Inspector and the Coal Mines Labour Welfare Commissioner.

(3) In respect of every person killed or injured as above, the owner, agent or manager shall, within seven days of the occurrence, send to the Chief Inspector, particulars in Form IV-B.

10. Notice of disease.—Where any person employed in a mine contracts any disease notified by the Central Government in the Official Gazette, the owner, agent or manager shall, within three days of his being informed of the disease, give notice thereof in Form V to the District Magistrate, the Coal Mines Labour Welfare Commissioner, the Chief Inspector, the Regional Inspector and the Inspector of Mines (Medical).

CHAPTER III—EXAMINATIONS AND CERTIFICATES OF COMPETENCY AND OF FITNESS

11. Board of Mining Examinations.—(1) For the purposes of these regulations there shall be constituted a Board of Mining Examinations, hereinafter referred to as "the Board". The Board shall consist of the Chief Inspector, who shall be the Chairman of the Board, and four members possessing technical qualifications and practical experience in coal mines who shall be appointed by the Central Government for a term of three years:

Provided that on the expiry of any term for which he had been appointed, any member shall be eligible for re-appointment.

(2) A member of the Board (other than the Chairman) shall receive such remuneration as the Central Government may fix.

(3) An Inspector nominated by the Chief Inspector shall act as the Secretary to the Board.

12. Certificates granted by the Board.—(1) Certificates under these regulations shall be granted by the Board.

(2) Certificates granted by the Board shall be valid throughout the territories to which these regulations extend, and shall be of the following kinds—

- (a) Manager's first class certificate of competency to manage a coal mine (in these regulations referred to as a First Class Manager's Certificate);
- (b) Manager's second class certificate of competency to manage a coal mine (in these regulations referred to as a Second Class Manager's Certificate);
- (c) Surveyor's certificate of competency to survey the workings of a mine (in these regulations referred to as a Surveyor's Certificate);
- (d) Overman's certificate of competency to carry out inspections and duties as required under these regulations (in these regulations referred to as an Overman's Certificate);
- (e) Sirdar's certificate of competency to carry out inspections and duties as required under these regulations (in these regulations referred to as a Sirdar's Certificate);
- (f) Winding engineman's I class certificate to drive a winding engine (in these regulations referred to as a I Class Engine-driver's Certificate);
- (g) Winding engineman's II class certificate to drive a winding engine (in these regulations referred to as a II Class Engine-driver's Certificate);
- (h) Shot-firer's certificate of competency to fire shots in a coal mine (in these regulations referred to as a Shot-firer's Certificate); and
- (i) Certificate of competency to test for the presence of inflammable gas (in these regulations referred to as a Gas-testing Certificate).

13. Examinations and Examiners.—(1) Certificates shall be granted to candidates after such examination and in such form as the Board may specify.

(2) The examinations shall be held at such times and at such centres as may be fixed by the Board, and shall be conducted by examiners appointed by the Board.

(3) The examiners so appointed shall be subject to the orders of the Board in respect of all matters relating to the conduct of the examinations, and shall receive such remuneration as the Board, with the sanction of the Central Government, may fix.

(4) The Board may make bye-laws as to the conduct of the examinations and as to the granting of certificates of competency and of fitness as required under these regulations, and shall, so far as may be practicable, provide that the standard of knowledge required for the grant of certificates of any particular class and the standard of medical fitness shall be uniform throughout the territories to which these regulations extend.

(5) Every bye-law made by the Board under this regulation shall be published in the Official Gazette; and no such bye-law shall have effect until three months after the date on which it was so published.

14. Submission of applications.—(1) Applications for an examination conducted by the Board shall be made to the Board not less than 60 days prior to the date fixed for the examination and on a form supplied for the purpose.

(2) Notice regarding the date and place of the examinations for the Manager's, Surveyor's and Overman's certificates shall be published under the order of the Board, in such periodicals as the Board may direct, not less than 60 days prior to the date fixed by the Board for receiving applications.

15. Age and general qualifications of candidates.—(1) (a) No person shall be admitted as a candidate at any examination held by the Board unless he is 21 years of age.

(b) No person shall be admitted as a candidate at any examination for a Manager's, Surveyor's, Overman's, Sirdar's or Shot-firer's Certificate unless he holds valid first-aid certificate of the standard of the St. John Ambulance Association (India):

Provided that if any candidate satisfies the Board that he has not had sufficient opportunity to obtain such first-aid certificate, the Board may, by order in writing, admit him to the examination on such conditions, if any, as it thinks fit to impose.

(c) Every application for any examination as aforesaid shall be accompanied by:

- (i) a certificate of age granted by a Gazetted Officer of the Government or by the headmaster of a recognised school of a Higher Secondary or equivalent standard: Provided that in the case of a person holding a matriculation or equivalent certificate, such certificate shall be submitted as evidence of age;
- (ii) a medical certificate obtained not more than two years prior to the date of his application, from a qualified medical practitioner not below the rank of a Civil Assistant Surgeon or from a Certifying Surgeon, certifying the candidate to be free from deafness, defective vision or any other infirmity, mental or physical, likely to interfere with the efficiency of his work; and
- (iii) a certificate from some person of good repute as to the general good conduct and sobriety of the candidate.

(2) No person shall be admitted as a candidate at any examination for Manager's or Surveyor's Certificate unless he has passed the matriculation examination of a recognised university, or its equivalent, and for an Overman's, Mate's, Engine-driver's or Shotfirer's Certificate unless he satisfies the Board that he is literate.

(3) No person shall be admitted as a candidate at any examination for a Manager's or an Overman's Certificate unless he has obtained a Sirdar's and a Gas-testing Certificate:

Provided that if a candidate satisfies the Board that he has not had sufficient opportunity to obtain the Sirdar's or Gas-testing Certificate, the Board may by order in writing admit him to the examination on such conditions, if any, as it thinks fit to impose.

16. Practical experience of candidates for Manager's Examinations.—(1) No person shall be admitted as a candidate at any examination for a First or Second Class Manager's Certificate unless the Board is satisfied that he has had practical experience in a coal mine for a period of not less than five and three years, respectively:

Provided that this period shall be reduced to three and two years respectively in the case of a candidate who has received a diploma or certificate in scientific and mining training after a course of study of at least two years at an educational institution approved in that behalf by the Central Government or who has taken a degree in scientific and mining subjects of a university approved in this behalf by the Central Government.

(2) The nature of the practical experience required of a candidate for a Manager's Certificate shall be experience approved by the Board and gained in workings below ground in one or other of the following capacities in a coal mine having an average monthly output of not less than 1000 tons—

- (a) as a workman, or a mining apprentice having direct practical experience of getting coal and of stonework, timbering and repairing; or
- (b) as an underground official:

Provided that the Board may approve a part of the period of practical experience which has been obtained in any of the aforementioned capacities in an opencast mine or in a mine other than a coal mine, upto a period not exceeding one year.

17. Practical experience of candidates for Surveyor's examinations.—No person shall be admitted as a candidate at any examination for a Surveyor's Certificate unless the Board is satisfied that he has had not less than two years' practical experience of surveying, of which at least six months shall have been practical experience of surveying the workings below ground of a mine having an average monthly output of not less than 1000 tons:

Provided that such period shall be reduced to six months in the case of a candidate who has attended classes in theoretical and practical surveying at an educational institution approved in that behalf by the Central Government.

18. Practical experience of candidates for Sirdar's and Shotfirer's examinations.—(1) No person shall be admitted as a candidate at any examination for a Sirdar's or a Shotfirer's Certificate unless the Board is satisfied that he has had practical experience and training in a coal mine for a period of not less than three and two years respectively:

Provided that in the case of a candidate for Shotfirer's Certificate, such practical experience and training shall include experience and training in connection with shot-firing for a period of at least six months:

Provided further that such period shall be reduced to a period of one year in the case of a candidate who has received a diploma or certificate in scientific and mining training after a course of at least two years at an educational institution approved in that behalf by the Central Government or who has taken a degree in scientific and mining subjects at a university approved in this behalf by the Central Government.

(2) The nature of the practical experience required of candidates for the aforesaid examinations shall be experience of a type approved by the Board.

19. Practical experience of candidates for Engine-driver's Certificates.—No person shall be admitted as a candidate at any examination for an Engine-driver's Certificate unless the Board is satisfied that he has had practical experience of driving a winding engine or as an assistant to a qualified winding engine driver for a period of at least one year:

Provided that after a period of two years after the coming into force of these Regulations no person shall be permitted to appear at any examination for a I Class Engine-driver's Certificate unless he holds a II Class Engine-driver's Certificate.

20. Examination Fees.—(1) Fees on the following scale shall be paid in respect of every application for admission to an examination—

	Rs.
(a) in the case of an examination for a First Class Manager's Certificate	50
(b) in the case of an examination for a Second Class Manager's Certificate	30
(c) in the case of an examination for a Surveyor's Certificate ..	20
(d) in the case of an examination for an Overman's Certificate ..	10
(e) in the case of an examination for a Sirdar's Certificate ..	5
(f) in the case of an examination for a I Class Engine-driver's Certificate	10
(g) in the case of an examination for a II Class Engine-driver's Certificate	5
(h) in the case of an examination for a Shot-firer's Certificate ..	3
(i) in the case of an examination for a Gas-testing Certificate ..	2

(2) The amount of any fee referred to in sub-regulation (1) less the following amounts, shall be returnable to the person by whom it has been paid if the application of such person for admission to the examination is rejected—

- Rupce one in the case of the fee paid for admission to an examination for a Shotfirer's or a Gas-testing Certificate.
- Rupees two in the case of the fee paid for admission to an examination for an Engine-driver's, Sirdar's or Overman's Certificate.
- Rupees five in any other case.

(3) The Chief Inspector may also permit the refund—

- of any fee paid under sub-regulation (1) where the candidate has died before the examination or where the fee has been erroneously paid; and
- of any amount paid in excess of that specified in sub-regulation (1).

21. Exchange Certificates.—(1) The Board may grant to any person holding a Colliery Manager's Certificate or a Surveyor's or Engine-driver's Certificate granted under any law for the regulation of mines for the time being in force in

any other country or under the Metalliferous Mines Regulations made under this Act, as the case may be, a certificate of similar class under these regulations if he passes such examination as the Board may stipulate.

(2) Every application for the grant of an Exchange Certificate under this sub-regulation shall be accompanied by:

- (i) a medical certificate obtained not more than two years prior to the date of his application, from a qualified medical practitioner not below the rank of a Civil Assistant Surgeon or from a Certifying Surgeon, certifying the candidate to be free from deafness, defective vision or any other infirmity, mental or physical, likely to interfere with the efficient discharge of his duties; and
- (ii) a certificate from some person of good repute as to the general good conduct and sobriety of the candidate:

Provided that in the case of a Manager's Certificate, the candidate shall also satisfy the Board that he has undergone, for a period of not less than six months, a course of practical training in India in the mines and in a manner approved by the Chief Inspector for the purpose. Before the commencement of his practical training in India as aforesaid, every person shall submit to the Chief Inspector an application in the form prescribed for the purpose.

(3) Fees on the scale laid down in regulation 20 shall be paid in respect of every examination under this regulation.

22. Overman's Service Certificate.—(1) The Board may, for a period of two years after the coming into force of these regulations, grant without a written examination, an Overman's Certificate to any person who has attained the age of 26 years and who produces satisfactory documentary evidence of having worked in the capacity of an overman, superior to a sirdar, in coal mines for a period of not less than five years if he passes such *viva-voce* examination as the Board may stipulate.

(2) Fees on the scale laid down in Regulation 20 shall be paid in respect of every examination for the grant of a certificate under this regulation.

23 Duplicate Certificates.—If any person proves to the satisfaction of the Board that he has, without any fault on his part, lost or been deprived of a certificate granted to him under these regulations, the Board may, upon realisation of the following fees, and subject to such terms and conditions as it thinks fit, cause a copy of the Certificate to be delivered to him—

	Rs.
(a) in the case of Manager's or Surveyor's Certificate	.. 5
(b) in the case of any other Certificate	.. 2

The word "DUPLICATE" shall be stamped across every such copy.

24. Certificates to be delivered to the manager.—When the holder of an Overman's, Sirdar's, Engine-driver's, Shot-firer's or Gas-testing Certificate is employed in a mine in a capacity which requires the possession of the said certificate, he shall deliver such certificate to the manager of the mine in which he is for the time being employed. The manager shall deliver to such person a receipt for the same; and shall retain the certificate in the office at the mine so long as the holder thereof is so employed, and shall return it to the holder on his ceasing to be so employed.

25. Court of Enquiry into fitness of a person to hold a Manager's or Surveyor's Certificate.—(1) If a person who is the holder of a Manager's or Surveyor's Certificate, has been convicted of an offence made punishable under the Act with fine which may extend to Rs 500 or more or with imprisonment, or if it appears to the Central Government that he is unfit to continue to hold such a certificate by reason of incompetence or gross negligence or misconduct in the performance of his duties under the Act or under these regulations, the Central Government may appoint a Court to hold an enquiry to determine as to whether or not such person is fit to continue to hold such certificate.

(2) The following provisions shall have effect with respect to the constitution and procedure of the Court holding such an enquiry:—

- (a) The Court shall consist of a person or persons appointed by the Central Government, and may conduct the inquiry either alone or with the assistance of an assessor or assessors appointed by the Central Government.

- (b) The Central Government may pay to the person or persons constituting the Court and to any assessor appointed to assist the Court, such remuneration or allowance as it may fix.
 - (c) The inquiry shall be public and shall be held at such place as the Central Government may appoint.
 - (d) The Central Government may appoint any person to undertake the management of the case.
 - (e) The Central Government shall, before the beginning of the inquiry, furnish to the person whose fitness to continue to hold a certificate is to be inquired into, a statement of the case on which the inquiry is instituted.
 - (f) The said person may appear at the inquiry either in person or by counsel, solicitor or agent approved by the Court, and may give evidence or call such witnesses as he thinks fit.
 - (g) If a majority of the persons constituting the Court thinks fit, the person whose conduct is under inquiry may be required to deliver up his certificate at any time before or during the inquiry; and such person shall be bound to comply with such requisition, unless he shows sufficient cause to the contrary.
 - (h) The Court, for the purpose of the inquiry, may exercise such of the powers of an Inspector under the Act as it may think necessary or expedient.
 - (i) The Court shall, subject to the foregoing, have powers to regulate the procedure of the inquiry and to adjourn it from time to time.
 - (j) A person appearing as a witness before the Court may be paid by the Central Government such expenses as would be allowed to a witness attending a civil or criminal court.
 - (k) At the conclusion of the inquiry, the Court shall send to the Central Government a report containing a full statement of the case together with its opinion thereon, and such account of, or extracts from, the evidence as it may think fit; and if it considers that the certificate in question should be cancelled or suspended, it shall add a recommendation to that effect. In the event of disagreement between the members of the Court, a dissentient from the opinion of the majority may forward a separate report to the Central Government with a statement of his recommendations.
- (3) The Central Government may, on the recommendation of the Court, cancel or suspend a certificate; and if it does so, the fact of such cancellation or suspension shall be notified in the Official Gazette and if the certificate or a duplicate thereof granted under regulation 22 is produced, be endorsed upon it.

26. Suspension of an Overman's, Sirdar's, Engine-driver's, Shot-firer's or Gas-testing Certificate.—(1) If in the opinion of the Regional Inspector, a person to whom an Overman's, Sirdar's, Engine-driver's, Shot-firer's or Gas-testing Certificate has been granted is incompetent or is guilty of negligence or misconduct in the performance of his duties, the Regional Inspector may, after giving the person an opportunity to give a written explanation, suspend his certificate by an order in writing.

(2) Where the Regional Inspector has suspended a certificate under sub-regulation (1) he shall within a week of such suspension report the fact to the Board together with all connected papers including the explanation if any received from the person concerned.

(3) The Board may, after such inquiry as it thinks fit, either confirm or modify or reduce the period of suspension of the certificate, or cancel the certificate.

27. Validity of an Overman's, Sirdar's, Engine-driver's and Gas-testing Certificate.—(1) (a) No Overman's, Sirdar's, Engine-driver's or Shotfirer's Certificate shall remain valid for a period of more than five years unless the certificate bears an endorsement by the Regional Inspector to the effect that the holder thereof has within the preceding five years, been examined and certified by a qualified medical practitioner appointed by the Chief Inspector to be free from deafness, defective vision or any other infirmity, mental or physical, likely to interfere with the efficient discharge of his duties.

(b) An application in respect of an examination in pursuance of clause (a) shall be made to the Chief Inspector, accompanied by a fee of five rupees.

(2) No Gas-testing Certificate shall remain valid for a period of more than three years, unless it bears an endorsement by the Regional Inspector to the effect that the holder thereof has, within the preceding three years, passed another examination in gas-testing.

28. Retirement age for managers and officials etc.—(1) No person shall act as a manager or an official or a shot-firer or a winding engineman in a mine after attaining the age of 60 years unless he has obtained, within the preceding one year, a medical certificate of fitness certifying him fit to carry out the duties prescribed for him in the Act and in these regulations and orders made thereunder:

Provided that if the Chief Inspector or the Regional Inspector is of the opinion that a person as aforesaid, though less than 60 years of age, is medically unfit to carry on the duties prescribed for him in the Act and in the regulations, and orders made thereunder, the Chief Inspector or the Regional Inspector may, by an order in writing, require such person to obtain a medical certificate of fitness within such period, not exceeding three months, as he may specify therein; and no such person shall continue to act in any capacity as aforesaid after the period so specified unless he has obtained a medical certificate of fitness.

(2) The medical certificate of fitness as aforesaid shall be obtained from such authority and in such manner as the Board may specify

CHAPTER IV—INSPECTORS AND MINE OFFICIALS

29. Qualifications of Inspectors.—(1) After the coming into force of these regulations, no new person shall be appointed as Chief Inspector unless he holds a degree or diploma in mining engineering of an educational institution approved by the Central Government and also a First Class Manager's Certificate granted under these regulations.

(2) After the coming into force of these regulations, no person shall be appointed as an Inspector unless he holds a degree or diploma in mining engineering of an educational institution approved by the Central Government and also a First Class Manager's Certificate granted under these regulations: Provided that—

- (i) in relation to electrical machinery installed in mines, a person holding a degree or diploma in electrical engineering of an educational institution approved by the Central Government may be so appointed;
- (ii) in relation to other machinery or mechanical appliances installed in mines, a person holding a degree or diploma in mechanical engineering of an educational institution approved by the Central Government may be so appointed; and
- (iii) in relation to the provisions of the Act and of the regulations which relate to matters concerning the health and welfare of persons, a person holding a degree or diploma in medicine, surgery, social science or labour welfare, as the case may be, of an educational institution approved by the Central Government may be so appointed.

(3) The Central Government may appoint any person whom it considers competent as an Inspector notwithstanding that such person, does not possess the qualifications prescribed in that behalf by this regulation.

30. Definitions.—For the purpose of this Chapter:

(a) every system of workings belowground inter-connected in such a manner that communication is practicable from any one part of the system to any other part by means of galleries, channels or drifts belowground shall be deemed to constitute one mine. If access from one system of such workings belowground to another such system is not practicable, each such system shall be deemed to constitute a separate mine:

Provided that where two or more systems of workings belowground not belonging to the same owner, for any special reason, are inter-connected, each such system shall be deemed to constitute a separate mine:

Provided further that where special conditions exist, the Chief Inspector may, by an order in writing and subject to such conditions as he may specify therein, permit or require the division of any one such system into two or more separate mines.

(b) the expression 'average output' means the average per month of the total output of the mine or mines during the preceding quarter.

31. Qualifications and appointment of managers.—(1)(a) No mine shall be opened, worked or reopened unless there is a manager of the mine, being a person duly appointed and having such qualifications as are required by these regulations.

(b) No person shall act or be employed as a manager unless he is 23 years of age and is paid by, and is directly answerable to, the owner or agent of the mine.

(2) Except as hereinafter provided in sub-regulation (6), and subject to the provisions of sub-regulation (3), no person shall act or continue to act, or be appointed, as manager of a mine or mines the average output of which corresponds to the figures given in column (i) of the table below unless he holds the corresponding qualifications given in column (ii) thereof:

(i)	(ii)
(a) In excess of 2,500 tons per month.	A First Class Manager's Certificate.
(b) In excess of 600 tons but not exceeding 2,500 tons per month.	A First or Second Class Manager's Certificate.
(c) In any other case.	A First or Second Class Manager's Certificate or a Manager's Permit granted under sub-regulation (6).

Provided that where special conditions exist, the Chief Inspector may, by an order in writing, direct that in the case of any such mine as is referred to in clause (b) of the table, the manager thereof shall be the holder of a First Class Manager's Certificate, and that in the case of any such mine as is referred to in clause (c) of the table, the manager thereof shall be the holder of a First or Second Class Manager's Certificate:

Provided further that if any mine-undertaking consists of two or more separate mines and if in the opinion of the Chief Inspector they are not sufficiently near to one another to permit of daily personal supervision being exercised by one manager, he may, by an order in writing, require the appointment of a separate manager for each of such mines.

(3) Where under the provisions of sub-regulation (2) or of regulation 149, a person holding a First or Second Class Manager's Certificate has been appointed as manager, a person holding lower qualifications shall not, except with the previous permission in writing of the Chief Inspector and subject to such conditions as he may specify therein, be so appointed during the succeeding twelve months, notwithstanding any reduction in the average output of the mine.

(4) No person shall act, or be appointed, as manager of more than one mine except with the previous permission in writing of the Chief Inspector and subject to such conditions as he may specify therein. No such permission shall have effect for a period exceeding 12 months, unless renewed. The Chief Inspector may at any time, by an order in writing, vary or revoke any such permission if the circumstances under which the permission was granted have altered or the Chief Inspector finds that the manager has not been able to exercise effective supervision in the mines under his charge.

(5) (a) The Chief Inspector may, after holding such examination as he may deem necessary and subject to such conditions as he may specify therein, grant to any person holding an Overman's Certificate, a permit (in these regulations referred to as a Manager's Permit) authorising such person to act as the manager of any specified mine, the average output of which does not exceed 600 tons.

(b) A Manager's Permit shall be valid only for such period, not exceeding 12 months, as may be specified therein. The Chief Inspector may renew any Manager's Permit for further periods not exceeding 12 months at a time.

(c) A fee of Rs. 10/- shall be payable in respect of every application for the grant of a Manager's Permit. No fee shall be charged for renewal thereof.

(d) The Chief Inspector may, by an order in writing, after giving the holder of such permit an opportunity to make his representation, cancel a Manager's Permit.

(6) The Chief Inspector may, by an order in writing, and subject to such conditions as he may specify therein, authorise any person whom he considers competent, being appointed to act as manager of any mine or mines for a specified period, notwithstanding that such person does not possess the qualifications prescribed in that behalf by sub-regulation (2); and may by a like order revoke any such authority at any time.

(7) (a) Where by reason of absence or for any other reason, the manager is unable to exercise daily personal supervision or is unable to perform his duties under the Act or these regulations, or orders made thereunder, the owner, agent or manager shall authorise in writing a person whom he considers competent to act as manager of the mine;

Provided that—

- (i) such person holds a Manager's or Overman's Certificate;
- (ii) no such authorisation shall have effect for a period in excess of 30 days, except with the previous consent in writing of the Chief Inspector and subject to such conditions as he may specify therein;
- (iii) the owner, agent or manager, as the case may be, shall forthwith send by registered post to the Chief Inspector and the Regional Inspector a written notice intimating that such an authorisation has been made, and stating the reason for the authorisation, the qualifications and experience of the person authorised, and the date of the commencement and ending of the authorisation; and
- (iv) the Chief Inspector or the Regional Inspector may, except in the case of a person possessing the qualifications specified in sub-regulation (2), by an order in writing, revoke any authority so granted.

(b) The person so authorised shall, during the period of such authorisation, have the same responsibilities, discharge the same duties, and be subject to the same liabilities as the manager.

(8) (a) No manager shall vacate his office without giving due notice in writing to the owner or agent at least 30 days before the day on which he wishes to vacate his office:

Provided that the owner or agent may permit the manager to vacate his office after giving a shorter notice.

(b) No owner or agent shall transfer, discharge or dismiss a manager unless the manager has been relieved by a duly qualified person as prescribed under sub-regulation (2).

(c) Nothing in sub-regulation (7) shall confer on the owner, agent or manager the right to authorise during any period of such notice, any person not duly qualified to manage the mine under sub-regulation (2), to act as the manager except in case of illness or other causes over which the manager has no control, or except with the previous written permission of the Chief Inspector and subject to such conditions as he may specify therein:

Provided that the Chief Inspector shall not permit any such authorisation for a period exceeding 60 days from the date on which the mine is worked without a manager duly qualified under sub-regulation (2).

(d) A copy of every such notice and authorisation shall forthwith be sent to the Chief Inspector and to the Regional Inspector by registered post.

(9) (a) The owner or agent shall provide suitable residential accommodation for the manager and the undermanager or assistant manager within a distance of three miles from all mine openings; and every manager, undermanager and assistant manager shall reside in the accommodation so provided:

Provided that where special difficulties exist which render compliance with these provisions not reasonably practicable, the Chief Inspector may, by an order in writing and subject to such conditions as he may specify therein, grant exemption from the same.

(b) No manager shall be entrusted by the owner or agent with any work, nor shall he himself perform any work, which will necessitate his frequent or prolonged absence from the mine.

(c) If any doubt arises as to any matter referred to in the foregoing clauses of this sub-regulation, it shall be referred to the Chief Inspector for decision.

(10) No manager shall act as agent or undermanager or assistant manager or in any other supervisory capacity in another mine.

32. Appointment of undermanagers or assistant managers.—In every mine the average output of which exceeds 7,000 tons, the manager shall be assisted by undermanagers or assistant managers on the following scale:

Average output	Number of undermanagers or assistant managers
Upto and including 10,000 tons	One.
Above 10,000 tons	One additional undermanager or assistant manager for every 5,000 tons output or part thereof in excess of 10,000 tons.

Provided that in a mine where the average output exceeds 20,000 tons, at least one of the undermanagers or assistant managers as aforesaid shall hold a First Class Manager's Certificate:

Provided further that the Chief Inspector may, by an order in writing and subject to such conditions as he may specify therein, permit or require the appointment of undermanagers or assistant managers in variation with these provisions.

33. Appointment of engineers.—(1) At every mine where machinery is used an engineer or other competent person not less than 23 years of age shall be appointed to hold general charge of such machinery, and to be responsible for its installation, maintenance and safe working. A notice of every such appointment, giving the name and full particulars of the qualifications and experience of the person so appointed, shall be sent to the Regional Inspector within seven days of such appointment:

Provided that after such date as the Central Government may notify in the Official Gazette, no person shall, except with the previous permission in writing of the Chief Inspector and subject to such conditions as he may specify therein, be so appointed in a mine having an average output of more than 5,000 tons, unless he holds a degree or diploma in electrical or mechanical engineering of an educational institution approved by the Central Government.

(2) No person shall undertake the duties of an engineer of more than one mine without the previous permission in writing of the Regional Inspector and subject to such conditions as he may specify therein. The Regional Inspector may at any time, by an order in writing, vary or revoke such permission.

(3) Where by reason of temporary absence by any cause, the engineer or competent person appointed under sub-regulation (1) is unable to perform his duties, the manager shall authorise in writing a person whom he considers competent to act in his place: Provided that—

(a) Notice of every such authorisation shall be sent to the Regional Inspector forthwith;

(b) No such authorisation shall have effect for a period in excess of 30 days except with the previous written consent of the Regional Inspector and subject to such conditions as he may specify therein; and

(c) The Regional Inspector may by an order in writing, revoke any authority so granted.

34. Appointment and qualifications of senior officials.—(1) At every mine, one or more overmen shall be appointed to hold charge of the different districts of the mine on each working shift.

(2) Every person employed as an official subordinate to the manager and superior to the sirdar shall hold either a Manager's Certificate or an Overman's Certificate.

35. Appointment of surveyors.—(1) At every mine, a person not less than 23 years of age and holding a Surveyor's Certificate shall be appointed to be the surveyor for carrying out the surveys and levellings and for preparing the plans and sections required under the Act or the regulations, or orders made thereunder. A notice of every such appointment, giving the name and full particulars of the qualifications of the person so appointed, shall be sent to the Regional Inspector within seven days of such appointment.

(2) No person shall be appointed as a surveyor of more than one mine or in any other supervisory capacity in the same mine, without the previous permission in writing of the Regional Inspector and subject to such conditions as he may specify therein. The Regional Inspector may by an order in writing, revoke the permission if the circumstances under which it was granted have altered or the Regional Inspector finds that the surveyor has not been able to carry out satisfactorily the work allotted to him.

36. Appointment of officials and competent persons.—(1) (a) The owner, agent or manager shall appoint such number of competent persons, including officials and technicians as is sufficient to secure, during each of the working shifts—

- (i) adequate inspection of the mine and the equipment thereof,
- (ii) a thorough supervision of all operations in the mine;
- (iii) the installation, running and maintenance, in safe working order, of all machinery in the mine; and
- (iv) the enforcement of the requirements of the Act and these regulations.

(b) Without prejudice to the requirements of clause (a), where the mine is worked on more than one shift, the owner, agent or the manager shall arrange that during the afternoon shift and the night shift, the mine is under the general supervision of an undermanager or assistant manager, if any, and of an experienced overman in other cases.

(2) It shall be the responsibility of the manager to see that the persons so appointed are competent to perform the duties assigned to them. No person shall be so appointed unless he is paid by the owner or agent and is answerable to the manager.

(3) Copies of all appointments made under sub-regulation (i) shall be entered in a bound paged book kept for the purpose. A list of all such competent persons shall also be maintained.

(4) Without prejudice to the requirements of sub-regulation (2), every manager on taking over charge of a mine, shall satisfy himself that all persons already appointed under sub-regulation (1) are competent to perform the duties assigned to them; and if he finds them competent, he shall either countersign their authorisations or issue fresh ones.

37. General management.—(1) The owner, agent and manager shall provide for the safety and proper discipline of persons employed in the mine.

(2) Except in a case of emergency, no person who is not an official or a competent person shall give, otherwise than through the Manager, instructions to a person employed in a mine, who is responsible to the Manager.

CHAPTER V—DUTIES AND RESPONSIBILITIES OF WORKMEN, COMPETENT PERSONS AND OFFICIALS

38. Duties of persons employed in mines.—(1) (a) Every person shall strictly adhere to the provisions of the Act and of the regulations, and orders made thereunder, and to any order or direction issued by the manager or an official with a view to the safety or convenience of persons not being inconsistent with the Act and these regulations; nor shall he neglect or refuse to obey such orders or directions.

(b) No person shall interfere with, impede or obstruct any person in the discharge of his duties, nor shall he offer or render any service, or use any threat, to any other person with a view to preventing him from complying with the provisions of the Act and of the regulations, and orders made thereunder or from performing his duties faithfully. If any person who receives any such offer or threat, fails to inform the manager forthwith, he shall also be guilty of a breach of these regulations.

(2) Every person shall, immediately before proceeding to work and immediately after terminating work at the end of his shift, have his name recorded in the register maintained under section 48(4) of the Act. In case of workings below-ground, he shall get his name recorded every time he proceeds, below-ground or returns to the surface.

(3) (a) No person shall, except with the authority of an official, remove or pass through any fence, barrier or gate, or remove or pass any danger signal.

(b) Subject to any directions that may be given by an official, no person shall, except for some justifiable purpose, go into any part of the mine other than that part in which he works, or travel to or from his working place by any roadway other than the proper travelling roadway.

(4) No person shall, while on duty, throw any stone or other missile with intent to cause injury, or fight or behave in a violent manner.

(5) Every person receiving any injury in the course of his duty shall, as soon as possible, report the same to an official who shall arrange for the necessary first aid to the injured person.

(6) No person shall sleep whilst on duty.

(7) (a) No person shall test for inflammable gas with a naked lamp, or brush or waft out inflammable gas. Should any person having a flame safety lamp find himself in the presence of inflammable gas, he shall not throw the lamp away or attempt to blow it out; but shall shelter it, hold it near the floor, avoid jerking it, and take it steadily into fresh air. Where he cannot take it into fresh air, he shall smother out the light or extinguish it in water.

(b) No person shall, when trying or examining for the presence of inflammable gas with a flame safety lamp, raise the lamp higher than may be necessary to allow the presence of inflammable gas to be detected.

(c) Every person using a safety lamp shall take proper care of it and shall not place it within 0.60 metres of the swing of any tool, except in the case of a lamp which is actually worn, attached to the body of such person. In the case of a flame safety lamp he shall not place it on the floor unless it is necessary to do so for the safe performance of any particular work; and if the lamp becomes damaged, he shall at once carefully lower the flame until it is extinguished, and shall, at the first opportunity, report the damage to his superior official.

(8) Subject to the provisions of the Act and of these regulations, and orders made thereunder, no person shall remain in a mine beyond the period over which his shift extends.

39 Duties of competent persons.—Every competent person shall be subject to orders of superior officials, and shall not—

- (a) depute another person to perform his work without the sanction of his superior official;
- (b) absent himself without having previously obtained permission from such official for the term of his absence or without having been relieved by a duly competent person; and
- (c) without permission from such official, perform during his shift any duties other than those for which he has been appointed.

40. Duties of officials.—(1) Every official shall carry out the duties assigned to him by the manager, undermanager or assistant manager in accordance with the provisions of the Act and of the regulations, and orders made thereunder.

(2) Every official shall, to the best of his power, see that persons under his charge understand and carry out their respective duties properly.

41. Duties and responsibilities of managers.—(1) (a) In every mine daily personal supervision shall be exercised by the manager; and in case of working belowground, he shall visit and examine the workings belowground on at least four days in every week to see that safety in every respect is ensured. Of these inspections, one at least in every fortnight shall be made during the night shift:

Provided that when owing to any unavoidable cause he is unable to carry out the aforesaid duties or inspections, he shall record the reason for the same in the book kept under clause (b).

(b) The manager, the undermanager and the assistant manager, if any, shall each maintain, in a bound paged book kept for the purpose, a diary; and shall record therein the result of each of his inspections and also the action taken by him to rectify the defects noticed, if any.

(2) The manager shall make arrangements for all overmen and other officials to meet him or an undermanager, or assistant manager once in every working day for the purpose of conferring on matters connected with their duties.

(3) (a) The manager shall see that a sufficient supply of proper materials and appliances for the purpose of carrying out the provisions of the Act and of the regulations, and orders made thereunder and for ensuring the safety of the mine and the persons employed therein, is always provided at the mine; and if he be not the owner or agent of the mine, he shall report in writing to the owner or agent when anything is required for the aforesaid purpose, that is not within the scope of his authority to order. A copy of every such report shall be recorded in a bound paged book kept for the purpose.

(b) On receipt of a requisition under clause (a) the owner or agent shall promptly arrange to supply the said materials and appliances, and shall within three days of receipt of the requisition, intimate to the manager in writing the action taken to meet the requisition.

(4) The manager shall assign to every competent person his particular duties, shall on his appointment make over to him a copy of the regulations, rules and byelaws and of any orders made thereunder which affect him, and shall take all possible steps to ensure that every such person understands, carries out and enforces the provisions therein contained in a proper manner.

(5) The manager shall provide every overman with a tracing, upto the date of the last survey, showing the workings of the district belowground assigned to him. Where any work of reduction or extraction of pillars is being carried out, such tracing shall show clearly the order in which such reduction or extraction is to be carried out.

(6) The manager shall examine all reports, registers and other records required to be made or kept in pursuance of the Act or of the regulations, or orders made thereunder, and shall countersign the same and date his signature. He may, however, by an order in writing, delegate this duty to an undermanager or assistant manager except in cases where a specific provision is made requiring the manager to countersign a report or register.

(7) The manager shall give attention to, and cause to be carefully investigated, any specific representation or complaint that may be made to him in writing by an employee of the mine as to any matter affecting the safety or health of persons in or about the mine.

(8) When any accident resulting in serious bodily injury to any person or in loss of life, occurs in a mine, the manager shall inspect the site of accident as soon as possible, and shall also either himself or through an undermanager or assistant manager, have an inquiry made into the cause of and circumstances attending the accident. The result of every such enquiry and a plan of the site of the accident showing details, shall be recorded in a bound paged book kept for the purpose.

(9) The manager shall perform such other duties as have been prescribed in that behalf under the Act, the regulations, or orders made thereunder.

(10) The manager may suspend or take such disciplinary action against any employee for contravention of any of the provisions of the Act, these regulations or orders made thereunder.

42. Duties and responsibilities of undermanagers or assistant managers.—(1) The undermanager or assistant manager shall carry out the duties assigned to

him by the manager, and shall see that in the part of the mine assigned to him by the manager, all work is carried out in accordance with the provisions of the Act and of the regulations and orders made thereunder.

(2) The undermanager or assistant manager shall, subject to the orders of the manager, visit and examine the workings under his charge, or part thereof, on every working day.

(3) The undermanager or assistant manager shall, from time to time, carefully examine every travelable part of the mine or part thereof placed under his charge, whether frequented by workpersons or not.

(4) In the absence of the manager, the undermanager or assistant manager shall have the same responsibility, discharge the same duties and be subject to the same liabilities as the manager, but not so as to exempt the manager therefrom.

43. Duties and responsibilities of overman.—The Overman shall strictly observe the following provisions, namely—

(1) (a) Subject to the orders of superior officials, he shall have responsible charge and control of such part of the mine, and shall carry out such duties, as may be assigned to him by the manager.

(b) He shall, while on duty, carry a tracing of the workings of such district, and shall keep the tracing up-to-date.

(c) He shall, in his district, make the inspections and reports required by these regulations.

(d) He shall be responsible to see that the subordinate officials and competent persons in his district carry out their respective duties in a proper manner.

(e) He shall, to the best of his power, enforce in his district the provisions of the Act, of these regulations, and orders made thereunder, and shall, subject to the control of the manager and the undermanager or assistant manager, if any, give such directions as may be necessary to ensure compliance with those provisions, and to secure the safety of the district and the safety and proper discipline of the persons employed therein.

(2) He shall see that sufficient supplies of timber, brattice and other necessities required for the safe working of his district are kept in convenient places therein.

(3) (a) He shall see that every air-crossing, stopping, door, brattice and other ventilation device is maintained in good order.

(b) He shall, in his district, see that the ventilation is effective; and when brattices or air pipes are required to be used for the ventilation of the working places, he shall see that they are kept sufficiently advanced to ensure that an adequate amount of air reaches every such working place.

(c) He shall have power to send out of the mine any person under his charge infringing or attempting to infringe any provision of the Act or of the regulations or orders made thereunder, or failing to carry out any direction given with regard to safety; and shall report in writing any such infringement or attempted infringement or failure to the manager.

(4) (a) He shall see that all tracks and tramlines are properly laid, graded, ballasted or otherwise packed.

(b) He shall see that the manholes on the haulage roadways are kept safe, clear of any obstruction, and properly white-washed.

(c) He shall see that stop-blocks, runaway switches and other safety devices are fixed and used as required under the regulations, that drags or back-stays are provided and regularly used behind tubs, ascending declines, and that a sufficient supply of suitable sprags is provided where tubs are loaded on a gradient or lowered down a gradient by hand.

(d) He shall, if he finds any of the ropes, chains, signals, brakes, jig wheel and posts or other apparatus in use in his district to be in an unsafe condition, stop the use of the same forthwith.

(5) He shall be responsible to see that except for the purpose of inspection, examination and repairs, every person other than an official or a haulage attendant travels by the travelling roadway.

(6) He shall give prompt attention to the removal of any danger observed or reported to him, and shall see that dangerous places are adequately fenced off.

(7) He shall, under the direction of the manager, see that approved safety lamps are used and naked lights excluded wherever and whenever danger from inflammable gas is apprehended.

(8) (a) He shall devote the whole of his time to his duties and shall visit each working place in his district as often as may be necessary or possible.

(b) He shall not, except for a justifiable cause, leave the district in his charge until he has finished the inspections required under these regulations and any other duties that he is required to perform, or until relieved by a duly appointed substitute.

(c) He shall, if the mine is working in a continuance succession of shifts, confer with the official succeeding him and give him such information as may be necessary for the safety of his district and of persons employed therein.

(9) He shall, at the end of his shift record in a bound paged book kept for the purpose, a general report on the performance of all his duties during the shift, including anything concerning the proper working of the mine and the safety and discipline of persons employed in his district

44. Duties and responsibilities of sirdars.—The sirdar or other competent person appointed under regulation 113 shall strictly observe the following provisions, namely—

(1) (a) Subject to orders of superior officials, he shall have responsible charge and control of the district of the mine assigned to him by the manager or the undermanager or assistant manager.

(b) He shall take reasonable means to ensure the proper observance of the requirements of the Act and of the regulations, and orders made thereunder by persons under his charge; and shall, as soon as practicable, report any contravention thereof to his superior official.

(2) (a) He shall make such inspections and reports as are required by these regulations, and in making such examination, he shall pay particular attention to edges of the goaf, if any, for checking supports and for presence of gas.

(b) Except in the case of a mine working in a continuous succession of shifts, he shall, on completion of the first inspection of the district, proceed to the station appointed under regulation 113 and instruct all persons as to their places of work and as to any special precautions necessary to be observed by them.

(c) If he finds any person in a place other than the one assigned to him, he may order such person out of the mine, and shall forthwith report the matter to his superior official.

(d) He shall ensure that no inexperienced person is employed on any work except under the supervision of an experienced person.

(3) (a) He shall see that the roof and sides of all travelling roadways to, and working places in, his district are made and kept secure.

(b) Where the height of any working place in the district in his charge measured from floor to roof exceeds three metres, he shall see that there are kept at convenient places in the district—

(i) a suitable wooden bunt or pole by which all parts of the roof may be effectively tested by a person standing on the floor. Except in a district to which regulation 144 applies, the bunt shall be shod with iron at one end; and

(ii) a ladder of suitable length.

(c) He shall report to his superior official any deficiency in timber, appliances and other necessities required for the safe working of the district.

(4) Where either of the two ways affording means of egress from the district to the surface is not ordinarily used for travelling, he shall travel, once at least in every seven days, the whole of such way in order to make himself thoroughly acquainted with the same.

(5) He shall see that no timber support is withdrawn except by means of a safety prop-withdrawer.

(6) (a) If he observes any dangerous place during the course of his inspections or if any danger at a place where workpersons are employed is reported to him, he shall, if the danger cannot be removed forthwith withdraw all persons from such place and shall not leave the place until the danger has been removed in his presence or all approaches to the place have been fenced off so as to prevent persons from inadvertently entering such place.

(b) He shall take care that any dangerous operation is carried out with due precaution, and in such cases shall be present throughout whenever any work of clearing falls of ground and setting of supports therein is being carried out.

(c) He shall cause the entrance to every place which is not in actual use or in course of working or extension, to be fenced across the whole width, so as to prevent persons from inadvertently entering such place.

(d) If he finds any accumulation of inflammable or noxious gases, he shall carry out the provisions of regulation 142 and shall not remove such accumulation until he has received instructions in that behalf from his superior official.

(7) He shall, on receipt of information of an accident to any person in his district, proceed at once to the place of accident, inspect the place and, if required, supervise the rescue operations; and shall report or send notice of the accident to the manager or under manager or assistant manager.

(8) (a) He shall devote the whole of his time to his duties, and shall not leave the mine until the end of the shift or until relieved by a duly appointed substitute.

(b) If the mine is worked by a continuous succession of shifts, he shall, before leaving his district, confer with the sirdar or competent person succeeding him; and shall acquaint him with all matters requiring his personal attention and give him such other information as may be necessary for the safety of his district and of the persons employed therein.

45. Duties and responsibilities of shotfirers.—The shotfirer shall—

- (a) carry out his duties in accordance with the provisions of the regulations of any orders made thereunder with respect to the transport and use of explosives;
- (b) be responsible for the observance by his assistants, if any, of such provisions and of any direction with a view to safety which may be given to them by a superior official;
- (c) not hand over any explosives to any unauthorised person;
- (d) see that clay, sand or other suitable stemming material is available in sufficient quantities at convenient places;
- (e) be present when shots are being charged and stemmed; and shall himself fire the shots; and
- (f) be responsible, when a shot has misfired, for seeing that the place is adequately fenced, and that the provisions of regulation 177 are strictly observed.

46. Duties of timberman.—The timberman shall carry out the orders of the manager, under manager or assistant manager, overman, sirdar or other competent person with respect to the securing of roof and sides. He shall at once report to the sirdar or other competent person any shortage of timber in his district. He shall also be responsible to see that wood-cuttings are not left in any working belowground

47. Duties of attendants of main mechanical ventilators.—The person in charge of the main mechanical ventilator shall—

- (a) keep the ventilator running at the speed fixed by the manager;
- (b) examine the machinery and observe the pressure-recording or water gauge and the speed-indicator at intervals of not more than one hour, and shall enter the readings of the indicator in a bound paged book kept for the purpose at the fan-house;
- (c) immediately report to his superior official any stoppage of, damage to, or defect or derangement in the machinery, or any unusual variation in the water-gauge or other indicators; and shall also immediately report to him any unusual circumstances in regard to mine ventilation which may come to his notice; and

- (d) where the ventilator is continuously operated, shall not leave his post until relieved by a duly appointed substitute.

48. Duties of lamp-room incharges.—The competent person in charge of a safety lamp room—

- (a) shall be responsible for ensuring that all lamps in the safety lamp room are properly maintained in accordance with the provisions of the regulations;
- (b) shall see that the safety lamp room is kept in a neat and tidy condition, and that all damaged and defective gauzes, glasses and other parts of safety lamps are not kept or stored in such room;
- (c) shall see that fire extinguishers or other means of dealing with fires provided in the safety lamps room are in good condition and readily available for use;
- (d) shall see that all records required by the regulations for the issue, return and maintenance of safety lamps are properly maintained; and
- (e) shall carry out such other duties relating to the maintenance, issue and return of safety lamps as may be specified by the manager or the undermanager or assistant manager.

49 Duties and responsibilities of surveyors.—(1) The surveyor shall—

- (a) make such accurate surveys and levellings, and prepare such plans and sections and tracings thereof, as the manager may direct or as may be required by the Act or by the regulations or orders made thereunder, and shall sign the plans, sections and tracings and date his signature;
 - (b) be responsible for the accuracy of any plan and section, or tracings thereof, that has been prepared and signed by him;
- (2) The surveyor shall record in a bound paged book kept for the purpose—
- (a) the full facts when workings of the mine have approached to about 75 metres from the mine boundary or from disused or waterlogged workings;
 - (b) any doubts which may exist concerning the accuracy of the plans and sections prepared under these regulations; and
 - (c) any other matter relating to the preparation of the plans and sections that he may like to bring to the notice of the manager.

Every entry in the book shall be signed and dated by the surveyor and countersigned and dated by the manager.

(3) Nothing in sub-regulation (2) shall absolve the owner, agent or manager of his responsibility under the Act and under these regulations, and orders made thereunder.

50. Duties and responsibilities of engineers.—The engineer or other competent person appointed for the purpose—

- (a) shall, subject to the orders of the manager and other superior official, hold general charge of all machinery at the mine; and shall be responsible for the proper installation, maintenance and safe working of such machinery;
- (b) shall, when any machinery is shifted or newly installed, see that it is given a trial run before it is put into use and shall be present during every such trial run;
- (c) shall be present throughout whenever any work of installing, changing or recapping of any winding rope, or of installing, changing or annealing any suspension gear, is being carried on;
- (d) shall see that the provisions of the Act and of the regulations and orders made thereunder relating to the installation, maintenance, operation or examination of machinery are properly carried out by himself or by subordinate officials, competent persons or work persons as the case may be, appointed for the purpose; and
- (e) shall, if mechanics, electricians or other subordinate officials or competent persons are appointed for the purpose, examine all reports, registers and other records relating to the installation, maintenance, operation or examination of machinery required to be made or kept in pursuance of the Act, these regulations or orders made thereunder, and shall countersign the same and date his signature.

51. Duties of winding enginemen.—(1) At the beginning of his shift the winding engineman shall examine the engine, brakes and all appliances in his charge, and shall satisfy himself that they are in good working order

(2) Every winding engineman shall during his shift keep the winding engine and apparatus connected therewith properly cleaned and oiled, and shall see that the engine room is clean and free of inflammable material.

(3) The winding engineman shall immediately report in writing to the engineer or other competent person appointed for the purpose any defect which he has noticed in the engine, brake, indicator, drum, rope or other appliances under his charge.

(4) The winding engineman shall not allow any unauthorised person to enter the engine room or in any way to interfere with the engine.

(5) The winding engineman shall thoroughly acquaint himself with, and carefully attend to, the prescribed code of signals; and shall not start the engine until he has received the proper signal to do so. If the signal is indistinct, he shall not start the engine until it has been repeated and he clearly understands it.

(6) The winding engineman shall avoid jerk in starting, running and stopping the engine, and shall cause the cage or other means of conveyance to be brought gently to rest at any stopping place.

(7) While persons are being lowered or raised in the shaft, the winding engineman shall not drive the engine at a speed higher than that fixed by the Manager for manriding purposes and approved by the Regional Inspector.

(8) The winding engineman shall not unclutch the drum of his engine until he has assured himself immediately beforehand by testing the brake of the drum against the full power of the engine that the brake is in proper condition to hold the load suspended from the said drum. When the drum is unclutched, he shall use the brake only for the purpose of maintaining such drum stationary, and shall not lower men or materials from an unclutched drum.

(9) The winding engineman shall on no pretext leave the handle or brake whilst the engine is in motion, or while persons are riding a cage or other means of conveyance in the shaft.

(10) The winding engineman shall not leave the engine whilst persons are at work in the shaft. Whenever he has occasion to leave the engine, he shall cut off the power and secure the drums with the brake.

(11) The winding engineman of a winding engine by which persons are lowered or raised in a shaft, shall not leave the engine at the end of his shift unless all the persons have come out of shaft or unless relieved by a duly appointed substitute.

52. Duties of banksmen and onsetters.—(1) Every banksmen or onsetter shall observe the following provisions—

(a) He shall, subject to the orders of a superior official, have full control of the top or bottom of shaft and the inset, as the case may be; and shall report to such official any person who, without authority, gives a signal or disobeys instructions.

(b) He shall thoroughly acquaint himself with, and carefully attend to the prescribed code of signals, and shall properly transmit the signals by the means provided. He shall not act on any signal the correctness of which he is in doubt, except a signal which he believes to be 'to stop'. He shall not allow any unauthorised person to give signals.

(c) He shall immediately report to his superior official any defect in the signalling installation.

(d) He shall devote the whole of his time to his duties, and shall not leave his post during the period of his duty. Where persons are raised or lowered in the shaft, he shall not leave his post at the end of his shift unless all the persons have come out of the shaft or unless relieved by a duly appointed substitute.

(e) He shall not allow more than the authorised number of persons to enter the cage or other means of conveyance at any one time.

(f) He shall not, unless specially authorised in writing by the manager in that behalf, allow any person when riding in a cage or other

means of conveyance, to take with him any bulky material other than tools and instruments: Provided that nothing in this clause shall be deemed to prohibit the carrying, in a cage or other means of conveyance, of explosives by a shotfirer or other competent person.

- (g) After any stoppage of winding for repairs or for any other cause for a period exceeding two hours, he shall not allow any person to ride in the cage or other means of conveyance unless it has been run at least one complete trip up and down the working portion of the shaft.
- (h) He shall not allow any person to ride on the top or edge of any cage or other means of conveyance except when engaged in examination, repair or any other work in the shaft.
- (i) He shall, after persons have entered the cage, see that the cage gates on both sides are in position and closed, before signalling for the cage to be lowered or raised.
- (j) He shall not allow any unauthorised person to handle tubs in or out of the cage. While tubs are being lowered or raised, he shall also see that the catches are holding the tubs properly before signalling the cage or other means of conveyance away. If he notices any defect in the tub-catches, he shall immediately inform his superior official.
- (k) He shall not, at any entrance into a shaft or inset which is provided with gates or fences not worked by the cage or other means of conveyance, begin to remove the gate or fence until the cage or other means of conveyance has stopped at the entrance, and shall close the gate before he has signalled the cage or other means of conveyance away. He shall not permit any unauthorised person to open or interfere with the gate.
- (l) He shall see that all fences and gates provided at the top of the shaft or at any inset are in position.
- (m) He shall not permit any unauthorised person to remove a fence or gate; and if he notices any defect in such fence or gate; he shall immediately inform his superior official.
- (n) He shall keep the top of the shaft or the inset and the floor of every cage free from loose material.
- (o) He shall, when long timber, pipes, rails or other material projecting over the top of a cage or other means of conveyance are lowered or raised, see that the projecting ends are securely fastened to the rope, chains or bow.
- (p) He shall when he suspects that the cages are not working smoothly in the shaft or when he hears anything unusual happening in the shaft while the winding engine is working, immediately give signal to the winding engineman to stop the engine.

(2) (a) At the beginning of his shift, the banksman shall see that the keps are in proper working order.

(b) The banksman, when he is informed of any danger in the shaft, shall not allow any person to descend except for the purpose of examination or repair; and during the time that such examination or repair is going on, shall be on duty and listen for signals.

(c) The banksman shall not permit any person descending the shaft to carry any intoxicating drink or drug, or allow any intoxicated person to descend.

53. Duties of haulage attendants etc.—(1) At the beginning of his shift, the haulage engineman shall examine the engine, its brake and all appliances in his charge, and shall satisfy himself that they are in good working order.

(2) The haulage engineman shall, during his shift keep the haulage engine and apparatus connected therewith properly cleaned and oiled, and the engine-room clean and free of inflammable material.

(3) The haulage engineman and brakesman shall report immediately to the engineer or other competent person appointed for the purpose any defect which he has noticed in the engine, brake, drum, rope or other appliances under his charge.

(4) Whenever the haulage engineman has occasion to leave the engine, he shall cut off the power and secure the engine with the brake.

(5) The haulage engineman, brakesman and signaller shall not allow any unauthorised person to enter the engineroom or in any way to interfere with the engine or signal, as the case may be.

(6) Every haulage engineman, brakesman and signaller shall thoroughly acquaint himself with, and carefully attend to, the prescribed code of signals. The haulage engineman shall not start the engine until he has received the proper signal to do so. If the signal is indistinct, he shall not start the engine until it has been repeated and he clearly understands it.

(7) The person in charge at the top of any haulage plane or incline shall see that the stop-blocks are blocking the way, before allowing any tub to be brought on to the top landing; and shall cause the tubs to be securely coupled up to each other and to the rope or chain, before the stop-block is opened. In case any alternative safety appliance is provided, he shall cause the same to be brought into use on every such occasion.

(8) The person who is responsible for the attachment, to the haulage rope, of any tub or set of tubs at any stopping place on any haulage plane or incline, shall see that no person remains in a position of danger at or near such stopping place while the rope is in motion.

(9) The person in charge of any tub or set of tubs, which it is intended to send up any haulage plane or incline on which drags or back-stays are required to be used, shall securely fix the drag or back-stay or cause it to be so fixed, before such tub or set of tubs is set in motion.

(10) The person in charge at the top or bottom of the incline shall see that no unauthorised person rides on any tub.

(11) Before a train of side tipping tubs is set in motion, the person in charge shall see that the safety catches of all such tubs are properly secured.

54. Duties of locomotive drivers.—(1) The locomotive driver shall, before commencing work in his shift, ensure that the audible signal and the brakes of the locomotive are in proper working order.

(2) The locomotive driver shall not work the locomotive except during hours of daylight, unless the locomotive is fitted with sufficient headlights as prescribed.

(3) The locomotive driver shall immediately report to the engineer or other competent person appointed for the purpose any defect which he has noticed in the locomotive or any part or fitting thereof.

(4) The locomotive driver shall not set the locomotive in motion until audible warning has been given by him to persons whose safety may be endangered. He shall also give the audible warning when the locomotive is approaching a level crossing or any place where any person is at work or where the driver's sight is intercepted.

(5) The locomotive driver shall not leave a locomotive unattended away from the places where it is housed, unless he has ensured that it cannot be set in motion by any unauthorised person.

(6) The locomotive driver shall ensure that no unauthorised person drives, handles or rides on a locomotive.

(7) When tubs or wagons are being pushed in front of the locomotive, the shunter shall accompany the leading wagon.

55. Duties of coal-cutting and loading machine drivers and fitters.—(1) Where a machine is required to work on a gradient exceeding 1 in 5, an effective contrivance to prevent the machine running back shall be provided and used.

(2) No coal-cutting or loading machine shall be fitted or otherwise moved with the cutting or loading tool in motion, except in the actual process of cutting or loading. If the cutting or loading tool, as the case may be, cannot be locked out of gear securely, it shall be removed before fitting is started.

(3) No person shall make any repair or adjustment to a coal-cutting or loading machine or shall put in or take out a pick, until he has made such arrangements as will prevent the mechanism being inadvertently put into motion while such operations are being performed.

(4) No person shall open or replace the cover of any electrical part of a coal-cutting or loading machine, except under the supervision and in the presence of an engineer, electrician or other competent person appointed for the purpose.

(5) The coal-cutting or loading machine driver shall not leave the machine unless he has completely cut off the power and has assured himself that the moving parts of the machine shall not be inadvertently set in motion.

56. Duties of magazine incharge.—The magazine incharge—

- (a) shall, subject to the orders of superior officials, be responsible for the proper receipt, storage and issue of explosives in and from the magazine;
- (b) shall maintain such records of explosives so received, stored and issued, as are required by the rules made under the Indian Explosives Act, 1884, and under the Act and under the regulations, rules, byelaws and orders made thereunder;
- (c) shall not issue explosives to any person other than a competent person; and when explosives are returned to the magazine, shall re-issue such explosives before issuing fresh stock;
- (d) shall record in a bound paged book kept for the purpose the names of various competent persons, and the quantity and nature of explosives issued to each of them; and shall similarly record the quantity and nature of explosives returned to the magazine by each such person;
- (e) shall securely lock each canister before issuing it to the competent person and shall also check whether the canister is returned to the magazine in locked condition; he shall not issue explosives in any canister which is not in proper repair or which cannot be securely locked;
- (f) shall not allow any unauthorised person to enter the magazine; and
- (g) shall, if he discovers any shortage of explosives in the magazine, forthwith inform the manager in writing.

57. Duties of register keepers and attendance clerks etc.—(1) Every person appointed to keep registers or other records required to be kept by or under the Act or under these regulations, or orders made thereunder, or to make entries therein, shall make the necessary entries in ink and with reasonable despatch.

(2) During the whole time that persons are at work, the attendance clerk shall remain on duty at attendance cabin which shall be provided near the workplaces, or in case of workings below ground, near the outlet used by the workpersons to enter and leave such workings.

(3) No person who is not an employee of the mine or is not entitled to enter the mine under the Act or under the regulations, or orders made thereunder, or is not so authorised by the manager, shall enter the mine. It shall be the duty of the attendance clerk to see that no such person enters the mine; if any such person forcibly enters the mine, the attendance clerk shall immediately report the matter in writing to the manager.

(4) If after the commencement of a shift any official or a competent person has not got his attendance recorded in the register maintained under section 48(4) of the Act, the attendance clerk concerned shall, within two hours after the commencement of the shift, report the fact in writing to the manager, undermanager or assistant manager or other official in charge of the shift.

CHAPTER VI—PLANS AND SECTIONS

58. General requirements about mine plans.—(1) Every plan or section prepared or submitted in accordance with the provisions of the regulations shall—

- (a) show the name of the mine and of the owner, and the purpose for which the plan is prepared;
- (b) show the true north, or the magnetic meridian and the date of the latter;
- (c) show a scale of the plan at least 25 centimetres long and suitably subdivided;
- (d) unless otherwise provided, be on a scale having a representative factor of 1200 : 1 :

Provided that the Chief Inspector may, by an order in writing and subject to such conditions as he may specify therein, permit or require the plans to be prepared on any other suitable scale; and

- (e) be properly inked in on durable paper or on tracing cloth, and be kept in good condition

(2) The conventions shown in the Second Schedule shall be used in preparing all plans and sections required by the regulations.

(3) The plans and sections required by the regulations shall be accurate and maintained corrected upto-a-date which is not earlier than three months:

Provided that where any mine or seam or section is proposed to be abandoned or the working thereof to be discontinued or rendered inaccessible, the plan and section shall be brought up-to-date before such abandonment or at the time of discontinuance, as the case may be, unless such abandonment or discontinuance has been caused by circumstances beyond the control of the owner, agent or manager, in which case the fact that the plan or section is not up-to-date shall be recorded on it.

(4) Plans and sections required to be maintained under the regulations shall be kept available for inspection in the office at the mine, and shall not be removed therefrom, except by or with the approval in writing of the Regional Inspector, unless a true copy thereof has been kept therein.

59. Types of plans.—(1) The owner, agent or manager of every mine shall keep the following plans and sections:

- (a) A surface plan showing every surface feature within the boundaries, such as telephone, telegraph or power transmission line, watermain, tram-line; railway, road, river, watercourse, reservoir, tank, bore-hole, shaft and incline opening, opencast working, subsidence and building on the surface.
- (b) An underground plan showing:
 - (i) the position of the workings of the mine belowground;
 - (ii) every bore-hole and shaft with depth, incline opening, cross-measure drift, goaf, fire-stopping or seal, water-dam (with dimensions and other particulars of construction), pumping station, and haulage roadway;
 - (iii) every important surface feature within the boundaries, such as, railway, road, river, stream, water-course, tank, reservoir, opencast working and building which is within 200 metres or any part of the workings measured on the horizontal plane;
 - (iv) the general direction and rate of dip of the strata;
 - (v) such sections of the seam as may be necessary to show any substantial variation in the thickness or character thereof and showing the working section, and such sections of the strata sunk or driven through in the mine or proved by boring as may be available;
 - (vi) the position of every roll, washout, dyke and every fault with the amount and direction of its throw; and
 - (vii) an abstract of all statutory restrictions in respect of any specified workings, with a reference to the order imposing the same.

Whenever this plan is brought up-to-date the then position of the workings shall be shown by a dotted line drawn through the ends of the workings, and such dotted line shall be marked with the date of the last survey.

- (c) Where a seam has an average inclination of more than 30 degree from the horizontal, one or more vertical mine section or sections, as may be required by the Regional Inspector, showing a vertical projection of the mine workings.
- (d) A ventilation plan, and section where necessary, showing the system of ventilation in the mine, and in particular—
- (i) the general direction of air-current;
 - (ii) every point where the quantity of air is measured;
 - (iii) every air-crossing, ventilation door, stopping and every other principal device for the regulation and distribution of air;
 - (iv) every fire-stopping and its serial number;
 - (v) every room used for storing inflammable material;
 - (vi) the position of fire-fighting equipment;
 - (vii) every water-dam with dimensions and other particulars of construction;
 - (viii) every pumping, telephone and ambulance station; and
 - (ix) every haulage and travelling roadway.
- (e) A geological plan of the area of leasehold, on a suitable scale.

(2) Separate plans and sections for the workings of every seam or of every separate section of every seam shall be kept in respect of clauses (b), (c) and (d) of sub-regulation (1):

Provided that in respect of plans maintained under clause (b) of sub-regulation (1), combined plans of all seams which are lying within nine metres of each other and which are worked at the mine shall also be kept; and in the combined plans, workings in different seams or sections shall be shown in different colours.

(3) (a) The plans maintained under clauses (a) and (b) of sub-regulation (1) shall also show surface contour lines drawn at vertical intervals not exceeding five metres

(b) The plans maintained under clause (b) of sub-regulation (1) shall also show spot levels on the floor of the workings—

- (i) along all haulage roadways, at every roadway junction, except in roadways where tramping is done by manual means where the spot levels may be shown at points not more than 150 metres apart; and
- (ii) in the case of headings which have been discontinued either temporarily or permanently, also at the end of such headings.

Where two drifts in stone or two galleries in coal, pass over one another, this shall be clearly indicated on the plans, with appropriate noting, if necessary.

(c) A permanent bench-mark shall be established on the surface, and all levels taken above and belowground shall be referred to a plane in relation to such benchmark. Particulars of the bench-mark, together with its height above Mean Sea Level, shall be shown on the plans required to be maintained under these regulations.

(4) (a) (i) The plans kept under clauses (a) and (b) of sub-regulation (1) shall also show the settled boundary of the mine, or where the boundary is in dispute, the boundaries claimed by the owner of the mine and by the owners of the mines adjacent to the disputed boundary:

Provided that where it is not possible to show the complete boundary of leasehold on the same plan, an additional key plan on any other suitable scale showing such boundaries and the outline of the workings shall also be maintained.

(ii) The plans required to be kept under clause (b) of sub-regulation (1) shall also show the workings, and all features as prescribed in that clause, both above and belowground of all adjacent mines as are situated within 60 metres, measured on any plane, of the boundary claimed by the owners of the mine.

(b) The owner, agent and manager of every mine shall give all reasonable facilities to the surveyors of its adjacent mines to carry out the surveys and levelings required to be made under this sub-regulation.

(5) (a) The Regional Inspector may, by an order in writing, require such additional details to be shown on the plans and sections required to be kept under these regulations, or the preparation and maintenance of such other plans and

sections showing such details and on such scale and within such time as he may specify in the order.

(b) The Regional Inspector may, by an order in writing, require the owner, agent or manager to submit to him within such time such plans and sections, or tracings thereof, as he may specify in the order.

(c) The owner, agent or manager shall, at any time if required by the Regional Inspector, show on any plan or section the then position of the workings of the mine.

60. Copies of plans and sections to be submitted.—The owner, agent or manager shall, on or before the 31st October of every year, submit to the Chief Inspector two up-to-date copies of the plans and sections maintained under clauses (b) and (c) of regulation 59(1). The provisions of this regulation shall be deemed to have been complied with if the owner, agent or manager gets the copies of plans and sections submitted hereunder during the previous years brought up-to-date at his own expense

61. Plans and sections to be submitted after abandonment or discontinuance.—(1) Where any mine or seam or section thereof is abandoned or the working thereof has been discontinued over a period exceeding 60 days, the person who was the owner of the mine at the time of the abandonment or discontinuance shall, within 30 days after the abandonment or within 90 days after the discontinuance of the workings, as the case may be, submit to the Chief Inspector two true copies of the up-to-date plan and section of the workings of the mine or seam or section maintained under clauses (b) and (c) of regulation 59(1). Every such copy shall show the bearing and distance of at least one of the shafts or openings of the mine from a trijunction or revenue pillar or from any other prominent and permanent surface feature, the position of all water-dams built belowground (with their dimensions and other particulars of construction) and also the spot levels at the ends of the workings:

Provided that if a change of ownership occurs after the abandonment or discontinuance and before the expiry of the 30 days or the 90 days aforesaid, as the case may be, such plans and sections shall be submitted forthwith.

(2) The original or a certified true copy of the plan and section submitted under sub-regulation (1) shall be kept in the office at the mine.

(3) The Chief Inspector may, on such conditions as he thinks fit to impose, and on payment of the cost of preparing copies as determined by him, supply copies of a plan or section submitted to him under sub-regulation (1) or such parts thereof as he thinks fit—

(a) to any person having a bonafide interest in the mine, seam or section; or

(b) to the owner, agent or manager of an adjacent mine.

62. Survey instruments and materials.—The owner or agent shall provide accurate and reliable survey instruments and materials for the proper carrying out of all survey and levelling work and for the preparation of the plans and sections required under these regulations; and no other instruments shall be used in connection with any such survey of levelling work.

63. Lists of plans, sections and instruments and their storage.—(1) All plans and sections, and tracings or copies thereof, kept at the mine shall be serially numbered.

(2) Suitable arrangements shall be made at every mine for the proper storage and maintenance of every plan and section and of all instruments and materials. Such arrangements shall provide for flat storage of every plan and section maintained under clauses (b) and (c) of regulation 59(1).

(3) Every field book and other notes used in the preparation of plans and sections required under these regulations shall be duly indexed and kept in the office at the mine.

(4) A list of all plans and sections maintained under these regulations, or any orders made thereunder, and tracings or copies thereof; of all survey instruments provided under regulation 62 with their respective types, specifications and identification numbers; and of all field books and other notes kept under sub-regulation (3) shall be kept in a bound paged book kept for the purpose, and shall be brought up-to-date whenever necessary. Every entry in the book shall be signed and dated by the surveyor, and counter-signed and dated by the manager.

64. Preparation of Plans by Surveyors.—(1) Every plan and section, and tracing thereof, prepared under these regulations shall be prepared by or under the personal supervision of the surveyor.

(2) Every plan or section, or any part thereof, prepared by or under the supervision of a surveyor shall carry thereon a certificate by him to the effect that the plan or section or part thereof is correct; and shall be signed and dated by the surveyor and countersigned and dated by the manager on every occasion that the plan or section is brought up-to-date.

(3) Every tracing of a plan or section or of any part thereof shall bear a reference to the original plan or section from which it was copied and shall be certified thereon by the surveyor to be a true copy of the original plan or section. The certificate shall be signed and dated by him.

(4) If the surveyor fails or omits to show any part of the workings or allows the plans or sections to be inaccurate, he shall be guilty of a breach of these regulations. Nothing in this sub-regulation shall, however, exempt the owner, agent or manager of their responsibility to ensure that every plan or section prepared, kept or submitted under these regulations or by any order made thereunder is correct and maintained up-to-date as required thereunder.

65. Plans to be checked on change of ownership or re-opening etc.—(1) When there is a change in the ownership of a mine, or where a mine or part thereof is reopened, or where in any mine or part thereof it is intended to start any extraction or reduction of pillars, the owner, agent and manager shall ensure that the plans and sections of the mine or part are accurate. If any doubt arises as to the accuracy of the plans and sections in any respect, he shall have accurate plans and sections prepared afresh before any drivage or other work of development or of extraction or reduction of pillars is commenced.

(2) If the Regional Inspector is of the opinion that any plan or section prepared, kept or submitted under the regulations is inaccurate, he may, by an order in writing, require a fresh survey made and a new plan or section prepared within such time as he may specify therein.

CHAPTER VII—MEANS OF ACCESS AND EGRESS

66. Outlets from a mine.—(1) No person shall be employed, or be permitted to enter or remain for purposes of employment, in any working belowground, unless the working is provided with at least two shafts, inclines or other outlets to the surface—

(a) with which every seam or section for the time being at work has a communication so as to afford separate means of ingress and egress to the persons employed therein;

(b) which do not have their surface openings in the same building; and

(c) which are under the sole control of the manager:

Provided that the Chief Inspector may, by an order in writing and subject to such conditions as he may specify therein, permit the employment belowground of persons even in a case where the two shafts, inclines or outlets are not under the control of the same manager.

(2) Suitable arrangements shall be made for persons to descend and ascend by each of such shafts, inclines or outlets; and

(a) where the shaft is more than 30 metres in depth, such arrangements shall be by mechanical means. Every mechanical equipment used for the purpose shall be so installed and maintained as to be constantly available for use. In case of a doubt as to whether any such arrangement is suitable or not, it shall be referred to the Chief Inspector for decision; and

(b) where in any shaft, ladders are used as a means of ingress or egress of persons employed in a mine, every such ladder shall—

(i) be of strong construction;

(ii) be securely fixed in the shaft at an inclination of not more than 80 degrees from the horizontal;

- (iii) be made continuous or without perceptible overlapping or break except at platforms which shall be provided at intervals of not more than nine metres;
- (iv) project at least one metre above the mouth of the shaft, and above every platform, except where strong holdfasts or hand-rails are provided;
- (v) have rungs equally spaced and at a sufficient distance from the wall or any timber to ensure proper foothold; and
- (vi) be maintained in good repair.

(3) Such shafts, inclines or outlets shall not be less than 13·5 metres distant from one another at any point, and each shall be connected with the other by means of a walkable passage, not less than 1·8 metres high and 1·5 metres wide, through the workings belowground that are being served by such shafts, inclines or outlets.

(4) Whenever the connection between two outlets which are required to be maintained under sub-regulation (1) has been obstructed or found dangerous, only such persons as are necessary to clear the obstruction or to repair the dangerous part of the connection or to make a new second outlet, as the case may be, shall be employed belowground until such time as the connection has been re-established or a new second outlet has been provided.

(5) The foregoing provisions of this regulation with respect to shafts, inclines and outlets shall not apply—

- (a) to a shaft which is being sunk or to an incline or outlet which is being made;
- (b) to any working for the purpose of making a connection between two or more shafts, inclines or outlets; and
- (c) to any working for the sole purpose of searching for or proving minerals;

so long as not more than 20 persons are employed belowground at any one time in the whole of the different seams in connection with a single shaft, incline or outlet:

Provided that nothing in this sub-regulation shall be deemed to authorise the driving of roadways for the development of a seam before a second outlet has been made in accordance with the said provisions.

67. Working shafts.—(1) Every shaft in use or in course of being sunk and every incline or other outlet shall be made and kept secure.

(2) Every shaft in the course of being sunk shall be provided with a permanent lining of metal, concrete or masonry, which shall at no time be more than six metres from the bottom of the shaft:

Provided that where iron or steel rings with a substantial lagging are used below the permanent lagging and are kept close to the bottom of the shaft, this distance may be increased to not more than 20 metres:

Provided further that in the case of a shaft where special conditions exist which make compliance with the provisions of this sub-regulation not necessary, the Regional Inspector may, by an order in writing and subject to such conditions as he may specify therein, grant exemption from the operation thereof.

(3) Every shaft regularly used for lowering and raising persons or materials, in which water seeps out of the strata shall be provided with water garlands or other means of collecting and conducting away seepage water.

(4) The top, all insets and the bottom of every working shaft and the sump thereof shall be kept clear and free from loose materials, tools and debris.

68. Fencings and gates at outlets.—(1) Every entrance to a mine from the surface, and the top and all entrances between the top and bottom, including the sump, if any, of every working, ventilating or pumping shaft, shall be kept securely fenced.

(2) Every walkable entrance from the surface to the workings belowground shall be provided with a substantial gate which shall be kept closed and locked when there are no persons belowground:

Provided that where such entrance is not used as a means of ingress or egress in or out of the mine, it shall be permanently closed so as effectively to prevent persons from entering therein.

69. Outlets from mine parts.—Every part of a mine shall, where practicable, be provided with at least two ways affording means of egress to the surface. If any doubt arises as to whether the provision of two such ways is practicable or not, it shall be referred to the Chief Inspector for decision.

70. Periodic examination etc. of outlets.—(1) Every shaft, incline and other outlets provided as required by regulation 66 shall be examined, once at least in every seven days, by an overman or other competent person. A report of every such examination shall immediately thereafter be recorded in a bound paged book kept for the purpose and shall be signed and dated by the person making the examination.

(2) If at the time of such examination or at any other time, the shaft, incline or other outlet is found to be not safe, it shall not be used for any purpose, except as a natural airway, until it has been made safe in all respects. Report of every such action taken shall be recorded in the book kept under sub-regulation (1).

CHAPTER —VIII—TRANSPORT OF MEN AND MATERIALS—WINDING IN SHAFTS.

71. Appointment etc. of winding enginemen.—(1) No person shall be appointed as a winding engineman unless he holds:—

(a) in the case of an electric winding engine of 75 h.p. or more or of a steam or compressed air winding engine which has cylinders exceeding 30 centimetres in diameter, a I Class Engine Driver's Certificate, and

(b) in any other case a II Class Engine Driver's Certificate:

Provided that this clause shall not apply to the driver of an Electrical Welding Engine upto 30 h.p. or of a steam or compressed air winding engine which has cylinders not exceeding 18 centimetres in diameter and which is not used for raising or lowering persons.

(2) Where special difficulties exist which make compliance with the provisions of sub-regulation (1) not reasonably practicable, the Chief Inspector may, by an order in writing and subject to such conditions as he may specify therein, relax the said provisions.

(3) No person, other than a winding engineman appointed under sub-regulation (1) shall operate any winding engine:

Provided that in an emergency any other competent person may be permitted to operate the engine.

(4) The name of the winding engineman on duty, together with the period of his shift shall be posted in the winding engine room. Where the Regional Inspector is of the opinion that the duties of any winding engineman are unduly arduous, he may by an order in writing require the period of his shift to be reduced to such period, not less than five hours, as he may specify.

(5) This regulation shall come into force on such date as the Central Government may, by notification in the official Gazette, appoint.

72. New winding installations—(1) When it is intended to bring into use any new winding installation for lowering and raising persons, the owner, agent or manager shall, not less than 60 days before such use, give notice of such intention to the Regional Inspector. The notice shall contain detailed specifications of the installation

(2) If the Chief Inspector, by an order in writing so requires, such additions or alterations shall be made to the installation, as he may specify in the order.

73. Construction and installation of winding equipment.—(1) Every part of a winding installation, including beargear shall be of sound construction and adequate strength, and shall be maintained in safe working order. In case of any doubt as to the foregoing, it shall be referred to the Chief Inspector for decision.

(2) The engine shall be firmly connected to a rigid foundation and shall be so designed, constructed and maintained that with the power provided, the raising and lowering of persons or materials can be carried out with ease, regularity and safety.

(3) Unless otherwise permitted in writing by the Chief Inspector and subject to such conditions as he may specify therein, every engine for winding shall be so situated in relation to the headgear that the winding rope shall not, in its extreme position, subtend in either direction an angle more than one and a half degrees with the plane of the sheave or pulley used in connection with the rope.

(4) (a) The diameter of the drums or sheaves of the winding engine, and of the pulleys and sheaves used in connection with the winding shall, unless otherwise permitted in writing by the Chief Inspector and subject to such conditions as he may specify therein, be not less than 80 times the diameter of the rope in the case of winding installations installed before the 25th day of October 1955 and not less than 100 times the diameter of the rope in other cases:

Provided that the Chief Inspector may, by an order in writing, require that in the case of any specified winding installation installed before the date aforesaid, the diameter of the said drums, pulleys or sheaves shall not be less than such size, upto 100 times the diameter of the rope, as he may specify in the order.

(b) The grooves of such sheaves or pulleys shall be suited to the diameter of such rope.

(c) Every pulley or sheave used in connection with winding shall, while in motion, rotate in a vertical plane, and shall be maintained in such a condition that slipping is reduced to a minimum.

74. Fittings of winding engines.—At every shaft, including a shaft in the course of being sunk, where winding is effected by means of an engine, the following provisions regarding winding engines shall have effect, namely:—

(1) There shall be on the drum such flanges, and also if the drum is conical or spiral, such other appliances, as will be sufficient to prevent the rope from slipping or coiling unevenly. Except in the 'Koepe' system of winding, the end of the rope shall be securely fixed in such a manner that the rope is not unduly strained. There shall be at least two turns of the rope on the drum when the cage or other means of conveyance is at its lowest working point in the shaft.

(2) (a) There shall be provided one or more brakes on the drum or the drum-shaft, which:—

(i) if there are two cages or other means of conveyance, will hold such cages or other means of conveyance when the maximum torque is applied in either direction; or

(ii) if there is only one cage or other means of conveyance, will hold the loaded cage or other means of conveyance in midshaft when the maximum torque is applied downwards.

(b) At least one of the brakes shall be so designed that the brake remains at the 'on' position except when operated.

(c) Where the brake or brakes are power-operated, at least one of them shall be arranged to be applied automatically at all times if the power supply fails.

(d) The brake on the drum shall be used only for the purpose of keeping such drum stationary and not for lowering the cage or other means of conveyance, except in cases where the engine is to be worked at a very low speed as when examining the winding rope or the shaft.

(3) Where the winding engine is worked by steam or compressed air, a screw stop-valve shall not be used as the controlling valve of the engine.

(4) Every engine shall be equipped with a reliable depth-indicator (in addition to any mark on the rope) showing to the winding engineman the position of the cage or other means of conveyance in the shaft, and an automatic device that will ring a bell in the engine room when the ascending cage or other means of conveyance is at a distance of not less than two revolutions of the drum from the top of the shaft. The depth-indicator shall be tested after every adjustment or replacement of the winding rope.

75. Shaft fittings.—At every winding shaft, other than a shaft in the course of being sunk—to which the provisions of regulation 79 shall apply—the following provisions shall have effect, namely:—

(1) (a) Efficient means shall be provided and maintained for interchanging separate, distinct and definite signals between the top of the shaft and—

- (i) the bottom or other permanent landing of the shaft; and
- (ii) every inset for the time being in use.

There shall also be provided and maintained efficient means for transmitting such signals from the top of the shaft to the winding engineman. All signals shall be transmitted by mechanical or electrical means.

(b) In signalling, the following code of signals shall be used and strictly observed:—

ONE RAP	.. STOP when engine in motion.
ONE RAP	.. RAISE when engine at rest.
TWO RAPS	.. LOWER.
THREE RAPS	.. MEN ready to ascend or descend.
THREE RAPS	.. IN REPLY—men may enter the cage or other means of conveyance.

Any other signals shall be in addition to, and shall not interfere with the foregoing.

(c) A printed copy of the code of signals, including additional signals, if any, shall be posted prominently at the top of the shaft and at every such inset and landing and also in the winding engine room.

(d) No person other than the banksman or onsetter shall give any signal unless he is an official of the mine or is authorised in writing by the manager to give signals.

(2) (a) The shaft shall be provided with sufficient number of guides to ensure smooth and safe travel of the cage or other means of conveyance.

(b) Where rope guides are used, the cheese-weights or bottom clamps shall be kept so exposed as to permit regular examination.

(3) Above the topmost landing, 'dogs' or other devices for holding the cage or other means of conveyance in the event of an overwind shall be provided, or the guides, runners or receivers shall be sprung.

(4) (a) Except in the 'Koepe' system of winding, at the top of every shaft where cages are used, suitable keps shall be provided and so arranged as to fall into the 'on' position when the operating lever is released.

(b) At every inset where keps or folding platforms are provided, arrangements shall be made to lock the keps or platforms securely in the 'off' position; and when in the 'off' position such keps or platforms shall leave the shaft clear for the passage of the cage. In every such case, a proper automatic indicator to show the position of the keps or platforms, as the case may be, shall be provided in such a position as to be easily seen by the banksman.

(5) Protective roofing, sufficient to prevent danger from anything falling in the shaft, shall be provided and maintained at the bottom of the shaft. The gap, both vertical and horizontal, between the protective roofing and the top of cage, when the cage is at the bottom of the shaft, shall not exceed 15 centimetres.

76. Manwinding.—At every shaft, other than a shaft in the course of being sunk, where a winding engine is used for the purpose of lowering or raising persons, the following provisions shall have effect, namely:—

(1) In respect of every part of the winding installation, including pulleys or sheaves, cages, chains, distribution plates and detaching hooks, the following particulars shall be recorded in a bound paged book kept for the purpose—

- (a) Name of the manufacturer and the year of manufacture;
- (b) Specifications and dimensions;
- (c) Reference to every certificate supplied with the part; and
- (d) Any other detail that may be necessary or required by the Regional Inspector.

All entries in the book shall be made and signed by the engineer or other competent person, and shall be countersigned and dated by the manager.

(2) Whenever any part or article is replaced or any repaired part or article is used in any winding installation, the fact of such replacement or repair shall be recorded in the book kept under sub-regulation(1).

(3) (a) A single-linked chain shall not be used, except for the short coupling chain attached to a cage or other means of conveyance. Such single-linked chain shall be attached to the safety hook through a distribution plate or other approved appliance.

(b) Where safety-chains are used, their length shall be such that if the king-bolt breaks, the shock to the cage or other means of conveyance is as slight as possible.

(4) Where drum-clutches are provided, the following provisions shall have effect, namely—

(a) The operating gear of the clutch of the drum shall be provided with locking gear to prevent inadvertent withdrawal of the clutch.

(b) Every engine used for the lowering or raising of persons shall have a suitable interlocking device so fitted that it is not possible—

(i) to unclutch any drum unless the brakes of such drum are applied; or

(ii) to release the brakes until the drum clutch is fully engaged and securely locked.

(c) Unless the cage or other means of conveyance attached to the drum is resting at the bottom of the shaft, the drum shall not be unclutched unless the winding engineman has assured himself immediately beforehand that the brake is fully applied.

(5) Except in the 'Koepe' system of winding, there shall be provided between the rope and the cage or other means of conveyance a detaching-hook. The space between such detaching-hook, measured from the centre of the hole for attaching it to the rope shackle, and the detaching-bell or plate when the cage or other means of conveyance is at its normal position at the top of the shaft, shall not be less than 1.8 metres where a geared engine is used, and not less than 3.6 metres where a direct-acting engine is used.

(6) In every shaft the engine shall be fitted with an automatically-recording speed-indicator.

(7) (a) In every shaft exceeding 100 metres in depth, there shall be provided an effective automatic contrivance to prevent over-speeding and overwinding, hereinafter called the "Automatic Contrivance". The Automatic Contrivance shall prevent the descending cage from being landed at the pit bottom or other permanent landing at a speed exceeding 1.5 metres per second and shall also control the movement of the ascending cage in such a manner as to prevent danger to persons riding therein. The Regional Inspector may, by an order in writing, specify the maximum speed of winding in any shaft.

(b) Tests of every Automatic Contrivance and every brake shall be made by the engineer or other competent person appointed for the purpose, in the following manner—

(i) once at least in every seven days, by raising each cage or other means of conveyance, in turn, to pass the last control point above the topmost landing; and

(ii) once at least in every three months, by attempting to land the descending cage at excessive speed. For the purpose of this test, the setting of the Automatic Contrivance may be altered so that a pre-determined point in the shaft is regarded as the landing.

The results of every such test shall be recorded in a bound paged book kept for the purpose, and shall be signed and dated by the person making the test.

(c) Unless the Automatic Contrivance is in full and fixed engagement with the winding engine, it shall be fully engaged, either automatically or by the winding engineman, whenever persons are to be lowered or raised; and a proper automatic indicator to show that this has been done shall be provided in such a position as

to be easily seen by the banksman. No person shall be allowed to enter any cage or other means of conveyance until the indicator shows that the Automatic Contrivance has been fully engaged

(8) Except where an Automatic Contrivance is provided to prevent overwinding a point shall be fixed and marked on the indicator of the engine in such a way as to show when the cage or other means of conveyance is at a distance of not less than twice the circumference of the drum from the completion of the wind; and if such cage or other means of conveyance contains persons, the winding engineman shall not, as soon as it has reached the point aforesaid, raise it for the remaining distance at a speed exceeding 1·2 metres per second.

(9) Where the only means of egress in a mine is by apparatus worked by steam or electricity, precautions shall be taken to ensure that the two winding engines do not fail simultaneously, and in particular, in the case of electric winding engines, the engines shall be capable of being connected to two separate power supplies. Unless the Chief Inspector by an order in writing otherwise directs, the provisions of this sub-regulation shall be deemed to be satisfied if an emergency winding gear is maintained.

(10) (a) Every cage or other means of conveyance in which persons ride, shall be—

- (i) covered completely at the top;
- (ii) closed in at the two sides in a manner sufficient to prevent persons or things from projecting beyond the sides;
- (iii) provided with a rigid hand-bar fixed in a position where it can be easily reached by all persons in the cage or other means of conveyance; and
- (iv) provided with suitable gates or other rigid fences such that the gap between the floor of the cage or other means of conveyance and the lowest part of the gate or fence does not exceed 15 centimetres and that between any two members of the gate or fence does not exceed 25 centimetres. Gates or fences shall not open outwards; and they shall be so fitted and maintained that they cannot be accidentally opened.

(b) The floor of every cage or other means of conveyance shall be strongly constructed and so maintained as to prevent any part of the body of a person riding in the cage or other means of conveyance from projecting beyond the floor.

(11) Not more than such number of persons as may be authorised by the manager shall be allowed to ride in the same cage or same deck of a cage or other means of conveyance at one time; and a notice specifying the number shall be posted at the top and the bottom of every shaft and at every inset. The number of persons fixed as aforesaid shall be such as to allow approximately 0·20 square metres of floor area per person.

(12) (a) No person shall, when ascending or descending a shaft, take with him any bulky material other than tools and instruments, except when engaged in repairing the shaft or with the written authority of the manager.

(b) Except as provided in clause (a), no person shall ride in a cage while materials or tubs are being raised or lowered in any of the cages or other means of conveyance.

(13) The Chief Inspector may, subject to such conditions as he may specify, relax the requirements of this regulation if the circumstances in any mine or part thereof are such as to render compliance with such requirements not reasonably practicable.

77. Multi-decks.—Where a cage has two or more decks which are used simultaneously, each floor at a landing shall be connected by an effective signalling device with the main floor of the landings; and only the banksman or the cusetter or an official, as the case may be, at such main floor shall give the action signal, and only after he has satisfied himself that all cage gates are closed.

78. Winding of material.—(1) Every cage used for the raising or lowering of tubs shall be provided with catches or other effective contrivances to prevent the tubs falling out. The cage shall not be set in motion unless the catches or other effective contrivances are in position.

(2) (a) The floor of every cage shall be kept clean; and no skip, bucket or tub shall be filled up to such a height that any of the contents can fall out.

(b) Before long timber, pipes, rails, or other material projecting over the top of the cage or other means of conveyance are lowered or raised, the projecting ends shall be securely fastened to the rope, chains or bow.

79. Winding in sinking shafts.—At every shaft in the course of being sunk, where a winding engine is used, the following provisions shall have effect namely—

(1) If the shaft exceeds 45 metres in depth, there shall be provided for each bucket or other means of conveyance a detaching-hook. Between the centre of the hole for attaching the detaching-hook to the rope shackle and the detaching-bell or place, when the bucket or other means of conveyance is at the top landing, there shall be a clear over-run space of not less than 3.6 metres.

(2) Where the shaft exceeds 150 metres in depth—

- (a) the bucket or other means of conveyance, when used for lowering or raising persons, shall be provided with sufficient cover overhead for protection from things falling down the shaft; and
- (b) there shall be provided for each bucket or other means of conveyance a sufficient number of guides which shall be kept extended to within 22.5 metres of the shaft bottom at all times when sinking is in progress:

Provided that the Regional Inspector may, by an order in writing, require the provision of guides in a shaft less than 150 metres in depth.

(3) (a) There shall be provided and maintained two separate means of interchanging distinct and definite signals between the bottom and the top of the shaft. Efficient means shall also be provided and maintained for transmitting such signals from the top of the shaft to the winding engineman. The signalling appliances shall be examined by a competent person once at least in every 24 hours. The result of every such examination shall be recorded in a bound paged book kept for the purpose and shall be signed and dated by the person making the examination.

(b) In signalling, the following code of signals shall be used and strictly observed.—

ONE RAP	..	STOP when engine in motion.
ONE RAP	..	TAKE UP SLACK when engine at rest.
ONE RAP	..	RAISE SLOWLY.
TWO RAPS	..	LOWER.
THREE RAPS	..	TAKE UP SLACK when men are riding.

Any other signals shall be in addition to, and shall not interfere with, the foregoing.

(c) A printed copy of the code of signals, including additional signals, if any, shall be posted prominently at the top of the shaft and also in the winding engine room.

(d) Except while riding in a bucket or other means of conveyance, no person other than the chageman or a person authorised in writing by the manager, shall give any signal.

(4) Every bucket or other means of conveyance in which persons or materials are conveyed, shall be of strong construction and so maintained as to prevent persons or materials from falling.

(5) (a) At the top of the shaft or at the landing where the bucket or other means of conveyance is normally landed, suitable doors or covering shall be provided. Except as may be required for the passage of the bucket or other means of conveyance, the doors or covering shall always be kept closed.

(b) Where the shaft exceeds 45 metres in depth, the persons working at the bottom of the shaft shall also be protected by an adequate protective covering which shall be kept lowered to within 22.5 metres of the bottom of the shaft at all times when sinking is in progress. Every such protective covering shall extend over the whole area of the shaft, sufficient space being left therein only for the passage of the bucket or other means of conveyance. Where special

circumstances exist, the Chief Inspector may, by an order in writing and subject to such conditions, as he may specify therein, grant an exemption from the provisions of this clause.

(6) Not more than such number of persons as may be authorised by the manager shall be allowed to ride in the bucket or other means of conveyance at one time; and a notice specifying such number shall be posted prominently at the top of the shaft.

(7) When tools, implements or other materials are lowered or raised, the banksman or chargeman, as the case may be, shall see that—

- (a) the bucket is properly loaded;
- (b) materials are not loaded above the rim;
- (c) long timber, pipes, rails, tools or other material with ends projecting over the rim are securely fastened to the rope, chains or bow; and
- (d) the bucket, before being sent away, is steadied, and the bottom and sides thereof are free from adhering material.

(8) Where guides are provided, the bucket or other means of conveyance shall be raised slowly from the bottom of the shaft, until the rider is picked up.

(9) While persons are at work on any scaffold or platform in the shaft, the following precautions shall be strictly observed—

- (a) The scaffold or platform shall be secured to the sides of the shaft in order to prevent it from swinging.
- (b) The opening for the passage of the bucket or other means of conveyance, shall be so protected as effectively to prevent anything falling through it.
- (c) The scaffold or platform shall not be lowered or raised except under the order of the chargeman or other competent person.

80. Winding ropes etc.—At every shaft where a rope is used for winding purposes, the following provisions shall have effect, namely—

(1) (a) No rope, bar, link, chain or other attachment to a cage or other means of conveyance shall be used unless it is of good quality and manufacture, is free from any visible defect and is of adequate calculated strength:

Provided that the Chief Inspector may, by an order in writing, prohibit the use of any rope or type of ropes where, in his opinion, such use is unsafe.

(b) The attachment between the rope and the cage or other means of conveyance shall be of such type and be maintained in such manner as to obviate accidental disconnection.

(c) In case of a doubt, as to the fitness of any rope, bar, link, chain or other attachment used or intended for use, it shall be referred to the Chief Inspector for decision.

(2) (a) Except in a sinking shaft less than 30 metres in depth, every winding rope shall be made of cold drawn steel wire, and the gauge of the wires used in the construction of such rope shall be suited to the diameter of the drums, pulleys and sheaves of the winding installation.

(b) In any shaft, including a shaft in course of being sunk, where persons are lowered or raised and where guides are not provided, no rope other than a rope of non-spinning type shall be used.

(c) No rope which has been spliced shall be used for winding purposes.

(d) Unless an exemption in writing has been granted by the Chief Inspector and subject to such conditions as he may specify therein, no rope the breaking load of which at any one point therein is less than 10 times the maximum static load on it when the cage or other means of conveyance attached to the end of the rope is at the lowest working point, shall be used or continued in use.

(e) At every mine where a shaft is used for lowering or raising persons, at least one spare winding rope, suitable for use in such shaft, shall be kept in store.

(3) (a) For every rope in use or intended for use, a certificate showing its breaking load, quality, construction and diameter (obtained from the manufacturer or supplier) and a history of its use, including a record of diameters of the drums, sheaves and pulleys used in conjunction with the rope, shall be kept in a bound paged book kept for the purpose. All entries therein shall be made and signed by the engineer or other competent person, and shall be countersigned and dated by the manager.

(b) If in the case of a rope a test certificate as to the amount of its breaking load is not available, it shall not be used unless a portion thereof, not less than three metres in length, has been cut off from the end of the rope attached to the cappel and tested in a laboratory, institution or test house approved by the Central Government for the purpose.

(4) No winding rope which has been in use for more than three and a half years shall be used for winding purposes:

Provided that where the Regional Inspector is satisfied that due to sparing use any such rope is in good condition even after the expiry of the said period, he may, by an order in writing and subject to such conditions as he may specify therein, allow the use of such rope for a longer period. Every application for permission to use a rope after the period of three and a half years aforesaid shall be accompanied by a copy of the entries, in respect of the rope, in the book kept for the purpose under sub-regulation (3), and also by a certificate as to the strength of the rope, obtained in the manner laid down in clause (b) of that sub-regulation. The certificate aforesaid shall relate to a piece of the rope cut off not more than three months prior to the date of the application:

Provided further that where the Regional Inspector is of the opinion that any rope has become unsafe for use in a shaft before the expiry of the period of three and a half years aforesaid, he may, by an order in writing, prohibit the use of such rope for winding purposes. An appeal against any such order may be preferred to the Chief Inspector.

(5) (a) No mode or type of capping shall be used, which fails to withstand a load of at least 10 times the maximum static load thereon.

(b) The cappel of a round rope shall not be attached to the rope by rivets passing through the rope.

(c) In those forms of capping, in which the wires at the end of the rope are bent back on the rope itself to form a cone, wedges formed by the lapping of soft iron wire shall be placed between the rope and that portion which is bent back. The length of the tapered portion of the socket shall be not less than 12 times the diameter of the rope.

(d) Where white metal is used in the capping of ropes, the tapered portion of the socket shall not be less than eight times the diameter of the rope.

(e) If white metal is used in the capping of ropes—

(i) its melting point shall not exceed 300 degrees centigrade, and its temperature when poured into the socket shall not exceed 363 degrees centigrade;

(ii) in the length of rope which is to lie within the tapered part of the socket, the fibre core, if any, shall be cut out and the wires shall be untwisted and thoroughly cleaned; and

(iii) the socket shall be heated to a temperature of about 100°C before the white metal is poured into it.

(6) Except in the 'Koepe' system of winding, every rope shall be recapped once at least in every six months, or if necessary, at shorter intervals and also after every overwind. Before every such recapping, a length, including the capping, of at least two metres shall be cut off the rope. Every piece of rope so cut off shall be opened and its internal condition examined. The operation shall be carried out under the supervision of the engineer or other competent person, who shall record the date and other particulars thereof (including the length of the rope remaining after recapping) in a bound paged book kept for the purpose; and shall sign and date the same.

81. Suspension gear.—(1) All parts of suspension gear in regular use shall; unless otherwise permitted by the Chief Inspector, be renewed after a period of service of not more than ten years, and at shorter intervals if necessary.

(2) (a) All cage chains in general use and all other parts of suspension gear between the rope and the cage or other means of conveyance, including the detaching-hook, shall be taken apart, cleaned and carefully examined as to wear and tear (where necessary by gauging) and for rust and cracks, once at least in every six months, or if necessary, at shorter intervals. The various parts shall be annealed or given other proper heat treatment before being refitted.

Provided that in the case of such chains or gear manufactured from a steel which is not liable to deterioration necessitating annealing or heat treatment, the Chief Inspector may, by an order in writing and subject to such conditions as he may specify therein, grant exemption from the carrying out of this operation.

(b) Every detaching-bell or plate used in connection with a safety-hook shall be examined, and the opening therein checked by calipers or gauges once at least in every 30 days

(c) The operations and examination required under this sub-regulation shall be carried out by or under the supervision of the engineer or other competent person, who shall record the date and other particulars thereof in a bound paged book kept for the purpose and shall sign and date the same

82 Precautions after recapping etc.—After every installation or recapping of a rope and after every renewal or refitting of any suspension gear the engineer or other competent person shall, after the cages or other means of conveyance fully loaded with materials have made five trips up and down the working portion of the shaft examine the cap and other parts of the suspension gear to see that they are in proper working order. A report of every such examination shall be recorded in the book kept under regulation 81(2) and shall be signed and dated by the person making the examination

83 Examination of winding equipment.—(1) It shall be the duty of the engineer or other competent person to examine—

(a) Once at least in every 24 hours

(i) the attachment of the winding rope to the drum, the depth indicator, every part of the suspension gear in the shaft, including cages or other means of conveyance and their gates, and every external part of the winding apparatus upon the proper working of which the safety of persons depends, and

(ii) the brakes of the winding engines

(b) Once at least in every seven days—

(i) each winding rope by passing the rope at a speed not exceeding one metre per second and

(ii) the external parts of the winding engine the guides and the signaling arrangements fitted in a shaft

(c) Once at least in every 30 days, every winding rope, by passing the rope at a speed not exceeding 0.5 metres per second. For the purpose of this examination the rope shall be cleaned of any encrusted dirt and grease at all places particularly liable to deterioration and at other places, not more than 30 metres apart throughout the length and any reduction in the circumference of the rope and the superficial condition of the wires as to wear corrosion, brittleness and fracture at every such place shall be noted, and

(d) Once at least in every 12 months the winding engine as to the condition of its internal parts

(2) A report of every such examination shall be recorded in a bound paged book kept for the purpose, and shall be signed and dated by the person who made the examination

(3) If on any examination made as aforesaid there is discovered any weakness or defect by which the safety of persons may be endangered, such weakness or defect shall be immediately reported in writing to the engineer or other competent person and to the manager, and until such weakness or defect is remedied, the winding installation shall not be used

84 Gates and fences—(1) At the top of every shaft and at every inset which is in use, there shall be provided suitable gates or fences which shall effectively close the openings into the shaft at all times when a cage or other means of conveyance is not at the top or the inset. Every such gate at the top of a shaft shall be self-operating

(2) (a) At every landing where it is necessary for persons to pass from one side of the shaft to the other, an adequate passby shall be provided for enabling them to do so without entering or crossing the shaft. Every passby so provided shall be not less than 1.8 metres high and 1.2 metres wide, and shall be kept clear of all obstructions.

(b) No person shall enter or cross, or be permitted to enter or cross, the exposed space at the bottom of any working shaft except for the purpose of entering or leaving a cage or other means of conveyance or for undertaking an examination, repair or any other work therein; and no person shall be allowed to work in any such space unless the cages or other means of conveyance, if any, have been stopped and adequate precautions have been taken for the protection of such person.

85. Duties of persons riding or working in shafts.—(1) No person shall get on or off a cage or other means of conveyance after the same has been signalled to be set in motion, or leave it until it has reached the appointed stopping place; nor shall any person ride on the top or edge of any cage or other means of conveyance except when engaged in an examination, repair or any other work in the shaft.

(2) Every person, when at or about the top or bottom of a shaft or any inset, shall obey the lawful orders and directions of the banksman or onsetter, as the case may be.

(3) (a) No person shall carry out any examination, repair or other work in any shaft while winding operations are being carried on; and no winding shall be carried on or permitted while persons are engaged in such examination, repair or work, except where winding is necessary for the same.

(b) The person in immediate charge of any examination, repair or work in any shaft shall warn the bankman and the winding engineman that such examination, repair or work is about to be undertaken.

(c) Every person while engaged in any examination, repair or other work in a shaft shall be accompanied by at least one other person; and all such persons shall be provided with effective safety belts unless otherwise efficiently protected against the risk of falling.

(d) Every person engaged in carrying out an examination, repair or other work in a shaft shall be protected by a suitable covering from objects falling from above. Every such person shall also be provided with a protective hat; and shall wear the same when so engaged.

86. General precautions.—(1) No unauthorised person shall enter, or be allowed in, a winding engine room.

(2) No adolescent or woman shall descend or ascend a shaft in a cage or other means of conveyance unless accompanied by one or more adult males.

CHAPTER IX—TRANSPORT OF MEN AND MATERIALS—HAULAGE

87. Haulage roadways.—The following provisions shall have effect with respect to every length of road or roadway in a mine where materials are transported in tubs by means of gravity or mechanical power, namely—

(1) Every such roadway shall—

(a) be of adequate dimensions and, as far as practicable, shall be straight and of regular gradient; and

(b) have tracks properly laid with rails of adequate section.

(2) (a) Pulleys, sheaves and rollers that alter the direction of a rope shall be securely fixed.

(b) No person shall, guide or adjust a moving rope on to a drum, pulley, sheave or roller except with a lever or other proper appliance.

(3) Where haulage is effected by one or more ropes, there shall be provided and maintained—

(a) at the top of every inclined plane, at least one stopblock or other effective contrivance to arrest tubs from running or moving out of control;

- (b) at least one runaway switch or other effective contrivance below the first stopblock or other effective contrivance at a distance greater than the length of a set or train of tubs.

Provided that such distance shall not exceed the length of a set or train of tubs by more than 10 metres,

Provided further that where the Regional Inspector, by an order in writing so requires, the stopblock and the switch or other effective contrivance aforesaid shall be so intercoupled that they do not remain simultaneously ineffective,

- (c) an attachment, behind an ascending tub or set or train of tubs, of a back stay, drag or other suitable contrivance for preventing the tub, set or train of tubs running back. Where an endless rope or chain is used, the provisions of this clause shall be deemed to be satisfied if suitable automatic catches or other effective contrivances are provided at suitable intervals along the track to prevent the ascending tubs running back.

Provided that the Regional Inspector may, by an order in writing and subject to such conditions as he may specify therein, grant exemption from the operation of this clause on grounds that compliance with the provisions thereof is not reasonably practicable,

- (d) safety hooks, jazz-rails or other suitable contrivances to prevent runaway in the forward direction,
- (e) tub re-railers at intervals of not more than 250 metres. Where a tub is re-railed manually, it shall either be detached from the rope or ropes or the haulage engine which works the rope shall be stopped, and
- (f) on every haulage roadway exceeding 30 metres in length, effective means of transmitting signals from every stopping place on the roadway to the place at which the machinery working the rope is operated. All signals shall be transmitted by mechanical or electrical means.

Provided that the Regional Inspector may, by an order in writing, require means of transmitting signals in the reverse direction also. If any doubt arises as to whether any means of transmitting signals is effective or not, it shall be referred to the Chief Inspector for decision.

- (4) (a) (i) The following code of signals shall be used and strictly observed—

ONE RAP	STOP when in motion
TWO RAPS.	.. LOWER or haul in slowly
THREE RAPS	START when at rest
FOUR RAPS	RAISE or haul out slowly

Any other signals shall be in addition to, and shall not interfere with, the foregoing

(ii) A printed copy of the code of signals, including additional signals, if any, shall be posted prominently at the place in which the machinery that works the rope is operated and at all regular stopping places along the roadway.

(iii) No person, other than a competent person or an official, shall give any signal.

(b) Where in any mine belowground, a system of haulage roadways (and conveyors, if any) extend to a distance of more than 600 metres from the shaft or the entrance to the mine, efficient telephonic communication shall be provided and maintained between the end of every such system and the bottom and top of the shaft or the entrance to the mine as the case may be.

Provided that where travelling is unduly arduous, the Regional Inspector may, by an order in writing, require the provision and maintenance of telephonic communication in any other case also.

- (c) Where telephones or electrical signals are provided—

- (i) adequate precautions shall be taken to prevent signal and telephone wires coming into contact with other cables and electrical apparatus;
- (ii) signal wires shall be supported on insulators, and shall not be energised at more than 30 volts;
- (iii) contact makers shall be so constructed as to prevent accidental closing of the circuit; and

- (iv) in every mine or part thereof to which regulation 144 applies, all signalling or telephonic communication circuits shall be constructed, installed, protected, operated and maintained in such a manner as to be intrinsically safe.

(5) At places where telephone receivers are installed or where signals and safety contrivances are regularly operated, every person using the telephone or operating any such signal or safety contrivance shall be afforded adequate protection against tubs moving out of control.

(6) (a) Where any person is allowed to work or pass while the haulage is in motion, manholes for refuge shall be provided at intervals of not more than 10 metres:

Provided that where the gradient is less than 1 in 6, such manholes may be provided at intervals of not more than 20 metres.

(b) Manholes shall be not less than 1·8 metres in height and 1·2 metres in depth, and not less than 0·75 metre but not more than one metre in width:

Provided that where the roadway is less than 1·8 metres in height, the manholes may be made to the full height of the roadway:

Provided further that the Regional Inspector may, by an order in writing and subject to such conditions as he may specify therein, permit the use as manholes of cross-roadways other than haulage roadways, of dimensions larger than those aforesaid.

(c) Every manhole shall be kept clean and clear of obstruction, and white-washed both inside and for a distance of not less than 0·3 metre around the aperture.

(d) As far as practicable, all manholes shall be provided on one side of the haulage roadway.

(e) In case where there are serious practical difficulties in providing manholes as specified in clauses (a) and (b), the Regional Inspector may, by an order in writing and subject to such conditions as he may specify therein, permit manholes to be at greater intervals or of other dimensions.

(f) Except where haulage is effected by means of an endless rope or chain, whenever the haulage rope is in motion, every person on the haulage roadway shall take shelter in a manhole.

(7) The manager shall, by an order in writing, in respect of every haulage road or roadway, fix the maximum number of tubs, according as to whether they are loaded or not loaded, that may be coupled together to run as a set or train. A notice specifying the number of tubs so fixed shall be posted prominently at the top and at all regular stopping places of the haulage road or roadway.

(8) At all places where tubs are coupled or uncoupled, there shall be a clear space of not less than one metre—

(a) between the tubs and one side of the roadway; and

(b) where there are two or more tracks, also between the adjacent tracks.

(9) (a) When any roadway or face is in direct line with a haulage track and persons may be exposed to danger from runaway tubs, a strong buffer or other effective contrivance to prevent such danger shall be provided and maintained.

(b) A stopblock or other effective contrivance shall be provided near the entrance of every tramping roadway branching off the main haulage road or roadway, and on every track which slopes towards a shaft.

88. Travelling roadways.—(1) Except when an exemption in writing has been granted by the Regional Inspector and subject to such conditions as he may specify therein, travelling roadways, separate from haulage roadways on which haulage is effected by mechanical means or gravity, shall be provided for persons to travel to and from their working places.

(2) Every such travelling roadway shall—

(a) be not less than 1·8 metres high throughout;

(b) where the inclination exceeds 30 degrees from the horizontal, be provided with suitable steps or ladders;

- (c) where the inclination exceeds 45 degrees from the horizontal, be provided, in addition to steps or ladders, with hand rails or ropes so as to ensure safe travel; and
- (d) where the inclination exceeds 60 degrees from the horizontal, be provided, in addition to the steps or ladders and rails or ropes, with suitable platforms at intervals not exceeding 10 metres measured along the slope.

(3) Except for purposes of inspection, examination or repair, every person other than an official or a haulage attendant shall travel by the travelling roadway.

(4) Where persons using a travelling roadway have to cross a conveyor or a haulage worked by mechanical means or gravity, a suitable cross-over or cross-under bridge or other suitable device approved in writing by the Regional Inspector shall be provided.

(5) No haulage shall be used for the general conveyance of persons except with the permission in writing of the Chief Inspector and subject to such conditions as he may specify therein.

89. Tubs and their movement.—(1) (a) On every tub there shall be provided and maintained at each coupling end a strong buffer projecting beyond the end and so arranged that when two such tubs are in tandem, the gap between the innermost ends shall not be less than 20 centimetres.

(b) On every side-tipping tub in use, safety-catches shall be provided to prevent accidental tipping. No tub or set or train of tubs shall be set in motion unless all the safety-catches are properly secured.

(c) The attachment between a rope or locomotive and a tub or set or train of tubs, and the attachment between any two tubs in a set or train, shall be of a type approved in writing by the Chief Inspector by a general or special order and so maintained as to obviate accidental disconnection.

(d) The state of every buffer and drawbar of every tub in use and of every safety-catch, coupling-chain and other attachment shall be examined once at least in every 14 days, by a competent person appointed for the purpose. A report of every such examination shall be recorded in a bound paged book kept for the purpose, and shall be signed and dated by the person who made the examination.

(2) (a) When tubs are about to be moved, persons likely to be endangered shall be warned.

(b) Two or more tubs shall not be moved by hand in close succession but shall be coupled and moved together. Two tubs shall be deemed to be in close succession when the distance between them at any time is less than 10 metres.

(c) No person shall cause or permit a tub to run uncontrolled except with the written permission of the manager:

Provided that the Regional Inspector may, by an order in writing, prohibit the uncontrolled movement of tubs at any place if he is of the opinion that such movement is likely to cause danger.

(d) No person while taking a tub down a gradient exceeding 1 in 20, shall go in front of the tub; and in every case where conditions are such that a person cannot control the tub from behind, he shall not take the tub down unless sprags or other suitable contrivances are used to control it.

(e) Where required for use, a sufficient number of sprags of suitable material and dimensions shall be provided.

(f) Every tub while standing on a track having a gradient of more than 1 in 20, shall unless held effectively by brakes or securely coupled to a haulage rope or locomotive, be effectively blocked, chained or otherwise secured.

(g) Except where haulage is effected by means of an endless rope, the coupling and uncoupling to tubs shall, as far as practicable, be done only when the tub or set of the tubs, and the rope if connected to the set is not in motion.

(h) As far as practicable, tubs shall not be coupled or uncoupled on a gradient.

(3) No person shall ride on any tub or haulage rope except with the written authority of the manager. A list of all persons so authorised shall be maintained.

90. Brakes of haulage engines.—Every haulage engine shall be provided with an effective brake.

91. Haulage Ropes.—(1) No rope shall be used for purposes of haulage if it has any serious visible defect over any length.

(2) Every rope which is capped shall be recapped once at least in every six months, and if necessary, at shorter intervals, under the supervision of a competent person.

(3) For every haulage rope in use, a record of size, construction, quality, name of supplier, and dates of installation and of recapping, shall be kept in a bound paged book kept for the purpose; and all entries therein shall be made by the competent person who shall sign the same and date his signature.

92. Roadway Conveyors.—(1) Every roadway conveyor shall be so installed that—

- (a) between the conveyor and one side of the roadway, there is a travelling space free from obstruction not less than one metre wide;
- (b) the conveyor or any part thereof does not scrape against wooden props or supports;
- (c) the anchoring of the return station of the conveyor is independent of the face or roadway support.

(2) Where the inclination of the conveyor is such as to give rise to danger from sliding objects or material, suitable devices shall be used to provide adequate protection against such danger.

(3) On every length of roadway in which a conveyor is installed for transporting loads over a distance exceeding 30 metres, there shall be provided and maintained effective means of transmitting signals from every point on the length of the road to the place at which the machinery working the conveyor is operated:

Provided that the Regional Inspector may, by an order in writing, require means of transmitting signals in the reverse direction also.

(4) No belt conveyor shall be used in a mine below-ground without the permission in writing of the Chief Inspector and subject to such conditions as he may specify therein.

93. Examination of haulage engines.—(1) It shall be the duty of a competent person to examine carefully—

- (a) once at least in every 24 hours, every haulage engine, brake-wheel, rope and other appliance in use; and
- (b) once at least in every seven days, every track where the haulage is effected by means of mechanical power or gravity, and every safety contrivance fitted thereon.

(2) A report of every such examination shall be recorded in a bound paged book kept for the purpose, and shall be signed and dated by the person who made the examination.

94. Examination of haulage and travelling roadways.—It shall be the duty of the overman or other competent person to examine carefully, once at least in every seven days, the state of all haulage and travelling roads and roadways, including roadways leading to all the outlets of the mine which are in use. A report of every such examination shall be recorded in a bound paged book kept for the purpose, and shall be signed and dated by the person who made the examination.

95. Locomotives.—(1) No locomotive shall be used belowground otherwise than in accordance with the permission in writing of the Chief Inspector and subject to such conditions as he may specify therein.

(2) No locomotive shall be used where the gradient of the track exceeds 1 in 15.

(3) No person other than the driver shall ride on any locomotive unless authorised in writing to do so by the manager.

(4) Except during shunting operations, the locomotive shall lead the tubs or set or train of tubs.

96. Movement of wagons.—(1) No adolescent shall be employed in moving railway wagons.

(2) The movement of railway wagons shall be carried on under the supervision of a competent male person who shall himself control the brake.

(3) Before wagons are moved, persons likely to be endangered shall be warned by the competent person appointed under sub-regulation (2).

(4) No person shall move or attempt to move a wagon by pushing at the buffer, or by pulling from in front.

(5) Where two or more wagons are moved simultaneously, the wagons shall be coupled together; and the number shall not exceed the number which can be effectively controlled; they shall be moved only by pushing from the sides or from behind the last wagon.

(6) No locomotive or wagon shall be moved when the natural light is insufficient, unless the approaching end is distinguished by a suitable light or is accompanied by a person carrying a lamp.

(7) No person, other than the competent person referred to in sub-regulation (2), shall pass immediately in front of wagons moving under bins or screens, nor between moving wagons and the under-structure of the bins or screens.

(8) No person shall be upon the buffer of a locomotive or wagon in motion unless there is a secure handhold, or stand thereon and unless there is also a secure footplace. No person shall pass over the couplings between any two wagons while the wagons are moving.

(9) No person shall cross a line of rails by crawling or passing underneath a train or wagon, nor shall a person sit or sleep underneath a wagon.

(10) Wherever railway-wagons are specially placed so as to afford a thoroughfare, such thoroughfare shall be not less than five metres in width.

(11) No material shall be placed or dumped within 1.2 metres from either side of a track of rails.

(12) All space between the rails at switches and crossings, in which the foot of a person is liable to be caught, shall, where possible, be kept filled with concrete, tar, asphalt, or wooden blocks.

97. Fencings and gates.—(1) Where any haulage road or tramline passes over a public road, suitable gates shall be provided to prevent danger to public from a moving tub, set or train of tubs or locomotive. Every such gate shall be fitted with a danger signal, and when the natural light is insufficient, also with warning lamps.

(2) Where occupied buildings are situated within 15 metres of any haulage road or tramline, a substantial fence shall be provided and maintained between such buildings and the haulage road or tramline.

CHAPTER X—MINE WORKINGS

98. Opencast workings.—In opencast workings, the following precautions shall be observed, namely—

(1) In alluvial soil, morum, gravel, clay, debris or other similar ground—

(a) (i) the sides shall be sloped at an angle of safety not exceeding 45 degrees from the horizontal or such other angle as the Regional Inspector may permit by an order in writing and subject to such conditions as he may specify therein; or

(ii) the sides shall be kept benched; and the height of any bench shall not exceed 1.5 metres and the breadth thereof shall not be less than the height;

Provided that the Regional Inspector may, by an order in writing and subject to such conditions as he may specify therein, exempt from the operation of this clause any working in the case of which special difficulties exist, which in his opinion make compliance with the provisions thereof not reasonably practicable; and

(b) where any pillar is left 'in situ' for the purpose of measurement, its height shall not exceed 2.5 metres; and where the height of such pillar exceeds 1.25 metres, the base of the pillar shall not be less than 1.5 metres in diameter.

(2) In an excavation in any hard and compact ground or in prospecting trenches or pits, the sides shall be adequately benched, sloped or secured so as to prevent danger from fall of sides.

(3) In coal, the sides shall either be kept sloped at an angle of safety not exceeding 45 degrees from the horizontal, or the sides shall be kept benched and the height of any bench shall not exceed three metres and the breadth thereof shall not be less than the height.

Provided that the Chief Inspector may, by an order in writing and subject to such conditions as he may specify therein, exempt from the operation of this sub-regulation any working, in the case of which special difficulties exist which in his opinion make compliance with the provisions thereof not reasonably practicable.

(4) No tree, loose stone or debris shall be allowed to remain within a distance of three metres from the edge or side of the excavation.

(5) No person shall undercut any face or side or cause or permit such undercutting as to cause any over-hanging.

99. Development work.—(1) The dimensions of pillars and galleries, and the shape of pillars, formed in any seam or section shall be such as to ensure stability during the formation and extraction of pillars, and during the period between such formation and extraction.

(2) Save with the previous permission in writing of the Regional Inspector and subject to such conditions as he may specify therein no gallery in a seam or section shall exceed three metres in height or 4·8 metres in width at any place.

(3) The pillars formed in any seam or section shall normally be rectangular in shape.

(4) The distance between the centres of any two adjacent pillars left in a seam or section shall not be less than that specified in the appended table as corresponding to the depth of the seam or section from the surface at that point and the width of the galleries in the workings in question:

Depth of seam from surface	Where the width of the galleries does not exceed 3·0 metres	Where the width of the galleries does not exceed 3·6 metres	Where the width of the galleries does not exceed 4·2 metres	Where the width of the galleries does not exceed 4·8 metres
	the distance between centres of adjacent pillars shall not be less than			
1	2	3	4	5
	Metres	Metres	Metres	Metres
Not exceeding 60 metres	12·0	15·0	18·0	19·5
Exceeding 60 but not exceeding 90 metres	13·5	16·5	19·5	21·0
Exceeding 90 but not exceeding 150 metres	16·5	19·5	22·5	25·5
Exceeding 150 but not exceeding 240 metres	22·5	25·5	30·0	34·5
Exceeding 240 but not exceeding 360 metres	28·5	34·5	39·0	45·0
Exceeding 360 metres	39·0	42·0	45·0	48·0

(5) Nothing in sub-regulations (2), (3) and (4) shall apply to workings in a mine made before the 7th September, 1926. In such workings, the following provisions shall apply, except during the extraction or reduction of pillars—

(a) If the distance between the centres of adjacent pillars is smaller than that specified in the table appended to sub-regulation (4), the pillars shall not be further reduced; or

(b) If the distance between the centres of adjacent pillars is not smaller than that specified in the table appended to sub-regulation (4), the pillar shall not be so reduced as to render such distance smaller than—

(i) the distance so specified, or

(ii) any distance required in this behalf by the Regional Inspector; and

- (c) The height and width of the galleries shall not be further increased without the permission in writing of the Regional Inspector and subject to such conditions as he may specify therein.

(6) In the case of all workings, where in the opinion of the Regional Inspector the dimensions of pillars or galleries are such as to render it likely that crushing of pillars or the premature collapse of any part of the workings will occur either before or during the extraction of pillars, he may, by an order in writing, require such modification of the dimensions aforesaid in respect of any future working as he may specify.

100. Depillaring operations.—(1) No extraction or reduction of pillars shall be commenced, conducted or carried out except with the permission in writing of the Chief Inspector and in accordance with such conditions as he may specify therein. An application for permission under this sub-regulation shall be accompanied by two copies of an up-to-date plan of the area where pillars are proposed to be reduced or extracted, showing the proposed extent of extraction or reduction of pillars, the manner in which such extraction or reduction is to be carried out, the thickness and depth of the seam, the nature of the roof, and the rate and direction of dip.

(2) The extraction or reduction of pillars shall be conducted in such a way as to prevent, as far as possible, the extension of a collapse or subsidence of the goaf over pillars which have not been extracted.

(3) (a) Save as provided by clause (b), no pillars shall be reduced or split in such a manner as to reduce the dimensions of the resultant pillars below those required by regulation 99 or by any order made thereunder, nor shall any gallery be so heightened as to exceed three metres.

(b) During the extraction of pillars, no splitting or reduction of pillars or heightening of galleries shall be affected for a distance greater than the length of two pillars ahead of the pillar that is being extracted or reduced:

Provided that where pillar extraction is about to begin in a district, such splitting or reduction of pillars or the heightening of galleries shall be restricted to a maximum of four pillars. The width of the split-galleries shall not exceed the width prescribed for galleries under regulation 99(4).

(c) The Regional Inspector may, by an order in writing and stating the reasons therefor, relax or restrict the provisions of this sub-regulation in respect of any specified workings to such extent and on such conditions as he may specify therein.

(4) Except where the voids formed as a result of extraction are stowed solid with sand or other incombustible materials, no extraction of pillars in any seam or section shall be commenced until fire-dams or stoppings have been provided in all openings, other than openings essential for ventilation and haulage, around the area to be extracted; and in the roads kept open for ventilation or haulage, foundations for such dams or stoppings shall be prepared, and bricks and other suitable materials shall be kept readily available in their vicinity. Shale or other carbonaceous material shall not be used in the construction of fire-dams or stoppings:

Provided that the Regional Inspector may, by an order in writing and subject to such conditions as he may specify therein, exempt from the operation of this sub-regulation any part of a mine where special conditions exist, which in his opinion make compliance with the provisions thereof not necessary or reasonably practicable.

(5) Where the method of extraction is to remove all the coal or as much of the coal as practicable and to allow the roof to cave in, the operations shall be conducted in such a way as to leave as small an area of uncollapsed roof as possible. Where possible, suitable means shall be adopted to bring down the goaf at regular intervals.

(6) Where the voids formed as a result of extraction are stowed with sand or other materials, the owner, agent or manager shall, on or before the 10th day of every month, submit to the Regional Inspector a statement giving the quantity of coal raised and the quantity of sand or other material stowed in every district during the preceding month.

101. Saving clause.—Nothing in regulation 99 or regulation 100 shall prevent the driving of any gallery through any pillar or the enlargement of any gallery beyond the limits specified by or under these regulations, where in the opinion of the manager such work is necessary for haulage, ventilation, drainage or any other purpose necessary for the proper working of the mine, if 14 days' previous

notice in writing of the intention to commence such work has been given to the Regional Inspector. Every such notice shall be accompanied by an offset plan showing details of the operation. If in the opinion of the Regional Inspector, such work is likely to endanger the stability of the workings, he may, by an order in writing, require the completion, before commencing such drivage or enlargement, of such protective works as he may specify therein.

102. Roads and working places.—(1) The roof and sides of all working places and travelling roadways, including airways and travelling roadways to second outlets, shall be made and kept secure.

(2) Proper provision shall be made to prevent the premature collapse of workings; and adequate steps shall be taken to isolate, control or remedy any such collapse which may occur.

(3) Whenever crush of pillars or any symptom of an impending collapse other than ordinarily caused by pillar extraction is detected, the manager shall inform the Regional Inspector forthwith.

103. Powers of Inspectors.—If in any mine or part thereof, it appears to the Regional Inspector that the provisions of regulations 98, 99, 100 and 102 or of any order issued under any of these regulations have not been complied with, he may give notice in writing to the owner, agent or manager requiring him to take such protective measures, within such time, as he may specify in the notice. In case of non-compliance with the requirements of the notice, the Regional Inspector may, by an order in writing, prohibit the extraction of coal in the part or parts of the mine in which protective measures are required to be taken, until the requirements specified in the notice are complied with.

104. Multi-section and contiguous workings.—(1) No work in a higher seam or section shall be done over an area in a lower seam or section which may collapse.

(2)(a) No workings shall be made in more than one section in any seam, nor shall workings be made in any two seams lying within nine metres of each other, without the prior permission in writing of the Chief Inspector and subject to such conditions as he may specify therein.

(b) Every application for permission under this sub-regulation shall be accompanied by two copies of a plan showing the proposed layout of the workings, a section of the seam or seams, the depth of the seam(s) from the surface, the rate and direction of dip, the proposed dimensions of pillars and galleries in each seam or section, and the thickness of the parting between the seams or sections.

(c) Where two or more such seams or sections are worked in a mine, the pillars in one seam or section shall, as far as practicable, be vertically above or below the pillars in the other seam or section unless the strata are inclined at an angle of more than 30 degrees from the horizontal.

(d) The parting left between any two such seams or sections shall not be less than three metres in thickness at any place:

Provided that the Chief Inspector may, by an order in writing and subject to such conditions as he may specify therein, permit or require a smaller or greater thickness of parting, as the case may be.

105. Workings under railways and roads etc.—(1) No workings shall be made and no work of extraction or reduction of pillars shall be conducted at, or extended to, any point within 45 metres of any railway, or of any public works in respect of which this regulation is applicable by reason of any general or special order of the Central Government, or of any public road or building, or of other permanent structure not belonging to the owner of the mine, without the prior permission in writing of the Chief Inspector and subject to such conditions as he may specify therein.

(2) Every application for permission under sub-regulation (1) shall specify the position of the workings of the mine in relation to the railway or public road or works or building or structure concerned, the manner in which it is proposed to carry out the intended operations, and the limits to which it is proposed to carry out the said operations; and shall be accompanied by two copies of a plan showing the existing and the intended mining operations in so far as they affect the railway or public road or works or building or structure concerned. A copy of the application shall also be sent in the case of a railway, to the railway administration concerned; and in the case of any public works as aforesaid, to such authority as the Central Government may by general or special order direct.

(3) Notwithstanding anything contained in the regulations, the stability of such railway, road, works, building or structure shall not be endangered until it has been dismantled, diverted or vacated, as the case may be.

(4) Where the stability of such railway, road, works, building or structure has been endangered due to any mining operations, the Chief Inspector may by order in writing require the owner to construct in the mine belowground or on the surface such protective works within such time as he may specify in the order.

106. **Protective works before a mine is closed.**—The Chief Inspector may, by an order in writing, require the owner of any mine to which regulation 6 applies, to construct in the mine belowground or on the surface such protective works within such time as he may specify therein.

107. **Workings near mine-boundaries.**—(1) No working shall be made within a distance of 7·5 metres of the boundary of any mine

and in the case of a disputed boundary, no working shall be made within a distance of 7·5 metres of the boundary claimed by the owner of an adjacent mine until such time as a binding agreement has been reached as to the correct boundary or the question has been finally determined by a court of law.

(2) Notwithstanding anything contained in sub-regulation (1), the Chief Inspector may, by an order in writing and subject to such conditions as he may specify therein, permit the workings of any mine or part thereof to extend to within any shorter distance than 7·5 metres aforesaid, or may require that the said workings shall not extend further than a specified distance, not exceeding 60 metres, of such boundary.

108. **Systematic Timbering Rules.**—(1) The provisions of this regulation with respect to systematic timbering shall apply to—

- (a) every district in a mine in which extraction or reduction of pillars is going on;
- (b) every "longwall" working;
- (c) every working in a disturbed or crushed ground; and
- (d) any mine or part of a mine where, in the opinion of the Regional Inspector, the roof or side is of such a nature as to require artificial support.

(2) The manager shall, before commencing any operations specified in clauses (a), (b) and (c) of sub-regulation (1) or at any time when required by the Regional Inspector, for the purpose of securing the roof and sides of the workings, frame Systematic Timbering Rules in the form specified in the Third Schedule, and submit a copy thereof to the Regional Inspector, who may approve of them either in the form submitted to him or with such additions or alterations as he may think fit. The Systematic Timbering Rules so approved shall not be altered without the previous permission in writing of the Regional Inspector and subject to such conditions as he may specify therein.

(3) The manager shall hand over copies of the Systematic Timbering Rules so approved to all the supervising officials concerned, and shall also post such copies at conspicuous places in the mine.

(4) The manager and such supervising officials shall be responsible for securing effective compliance with the provisions of the Systematic Timbering Rules, and no mine or part of a mine shall be worked in contravention thereof.

109. **Setting of supports.**—(1) Every prop, or bar used as a support shall be set securely and on a secure foundation; and whenever it becomes loose or broken shall, as soon as possible, be tightened or replaced.

(2) Every cog used as a support shall be well built on the natural floor or on a secure foundation, and shall be made and kept tight against the roof. Only rectangular pieces of material shall be used as members of a cog, so however that in case of timber it shall be sufficient to joggle two opposite sides to provide flat surfaces.

(3) The walls of every pack used for the purpose of support shall be well built on the natural floor; and the pack shall be filled with debris or other suitable incombustible material and made as tight against the roof as practicable, over its whole area.

(4) Where sand or other material is stowed for the purpose of support, it shall be packed tight against the roof.

(5) Except where it is no longer necessary for purposes of support, any support dislodged by or removed for any operation shall be replaced with the least possible delay.

(6) In every place wherein a fall of roof or sides involving the displacement or breakage of supports has occurred, no work of clearing the fall or any part thereof shall be undertaken until the newly exposed roof or side in the vicinity of the fall or part thereof has been examined and made safe—if necessary, by temporary supports.

110. Withdrawal of supports.—Whenever props, bars or cogs set as supports are to be withdrawn, a safety prop-withdrawer or other suitable contrivance shall be used.

111. Steep workings.—(1) In workings having an inclination of 30 degrees or more from the horizontal, adequate precautions shall be taken to prevent danger to persons from falling or rolling of timber, tools or other appliances or material.

(2) No person shall work or be permitted to work at any place having an inclination of 45 degrees or more from the horizontal, where he is likely to slip or overbalance, unless he is secured by a safety belt or life line or is otherwise safeguarded.

112. Fencings and gates.—(1) (a) The top of every opencast working shall be kept securely fenced.

(b) Where an excavation which has been formed as a result of any mining operation, extends within a distance of 15 metres from a public road or any building, substantial fencing shall be erected and maintained around the excavation.

(c) Where as a result of mining operations, a subsidence of the surface has taken place or is likely to take place, and persons are likely to be endangered thereby, the owner, agent or manager shall keep the entire surface area securely and effectively fenced.

(2) Every entrance to a shaft, staple pit, sump, goaf or other dangerous place shall be provided with an efficient fence, barrier or gate, so designed and constructed as to effectively prevent any person from entering or falling therein.

(3) Where a shaft or staple pit or a gallery having an inclination of more than 30 degrees from the horizontal leads directly into a working place or travelling roadway, such place or roadway and any working place situated on its dip side, shall be securely guarded or otherwise protected as to prevent danger to persons from falling materials.

(4) Every entrance from a roadway in a mine to a part of the mine which, for the time being, is neither being worked nor being used for any purpose, by reason of any cause whatsoever, shall be provided with a fence, barrier or gate so designed and constructed as to prevent any person from inadvertently entering that part of the mine.

(5) (a) Shafts and opencast workings temporarily or permanently out of use and any place in or about an excavation which is dangerous shall be completely filled in or kept securely fenced:

Provided that if in the opinion of the Regional Inspector, any disused trench, pit or other excavation is dangerous, he may by an order in writing, require the same to be filled in to the level of the adjacent ground.

(b) Before a mine is abandoned or the working thereof discontinued, the owner, agent or manager shall cause the top or entrance of every shaft, incline or other opening into the mine to be fenced by a structure of a permanent character sufficient effectively to prevent persons falling into or entering the same.

113. Examination by sirdars.—(1) Every place in a mine, whether below-ground or in opencast workings, including travelling roadways and landings, where work is carried on or where persons are stationed or required to pass shall be placed under the charge of a sirdar or other competent person.

(2) The mine or district assigned to a sirdar or other competent person shall not be of such a size, nor shall any additional duties other than his duties under the regulations be such, as to be likely to prevent him from carrying out in a thorough manner the duties prescribed for him under the regulations. If any doubt arises as to the foregoing, it shall be referred to the Chief Inspector for decision.

(3) (a) At the entrance to every mine or district, one or more stations shall be fixed by the manager; and except in the case of a mine working in a continuous succession of shifts no person other than the persons making the examination under clause (b) or an official shall pass beyond any such station until all the roadways and working places to which such persons are required to have access, have been examined by the competent person in charge of the mine or district and found to be satisfactorily ventilated and in safe condition. Every such station shall be legibly marked 'STATION' and shall be of such a size as to accommodate all the persons employed in the district in any one shift.

(b) The Sirdar or other competent person accompanied by such assistants as he requires shall, within two hours before the commencement of work in a shift, inspect every part of the mine or district assigned to him, in which persons have to work or pass during the shift, and all roadways and working places where work is temporarily stopped; and shall ascertain the condition thereof as regards ventilation, sanitation, the presence of gases, the state of the roof and sides, and generally so far as the safety of the persons is concerned:

Provided that in the case of a mine to which regulations 122(2) and 144 apply, such inspection shall be made with an approved flame safety lamp, and that in the case of a district to which regulation 122(2) applies, a cage containing suitable birds or other means of detecting carbon monoxide gas approved by the Chief Inspector shall also be carried during every such inspection.

(c) Similar inspections shall be made once at least in every four hours during which the shift continues, of all the roadways and other working places to which persons engaged in the mine or district are required to have access.

(d) The Sirdar or other competent person shall, at the completion of his shift, record without delay the result of his inspections in a bound paged book kept for the purpose. Every such report shall be a full and accurate report of the inspections and shall include the following—

- (i) the details referred to in clause (b);
- (ii) the number of persons working under his charge;
- (iii) such instructions for the purposes of securing the safety of the persons as he may have given during his shift; and
- (iv) the date and time of the inspections, the signature of the Sirdar or other competent person, and the date and time when the report was written.

(4) In the case of a shaft in the course of being sunk, the competent person or chargeman shall—

- (a) have entire charge of the shaft bottom and shall, in his shift, remain in the shaft while persons are at work at the bottom of the shaft. He shall be the last person to ascend the shaft at the end of the shift; and if his shift is succeeded immediately by another shift, he shall not leave the bottom of the shaft until after the descent of the chargeman of the succeeding shaft; and
- (b) after each round of shots, and at the beginning of every shift, and after every cessation of work in the shaft for a period exceeding two hours, shall examine the sides of the shaft and remove all loose pieces before persons are allowed to descend.

114. Avoidance of dangers.—(1) If at any time it is found by a competent person in charge of a mine or district, that by reason of any cause whatsoever, the mine or district is dangerous, he shall immediately withdraw all persons from the mine or district; and the mine or district shall be fenced off so as to prevent persons inadvertently entering therein.

(2) The competent person shall also immediately inform the manager or under-manager or assistant manager about the danger, and shall record the fact in the book kept under sub-regulation (3).

(3) The manager shall make, or cause to be made by a competent person, a careful examination of the mine or district; and no person shall, except in so far as is necessary for enquiring into the cause of the danger or for the removal thereof or for exploration, be re-admitted into the mine or district until the mine or district is reported to be safe. A report of every such examination shall be recorded without delay in a bound paged book kept for the purpose and shall be signed and dated by the person who made the examination.

(4) If the work of removing the danger is suspended before the danger is removed, the mine or district shall be securely fenced off effectively to prevent persons entering therein during the period of suspension.

(5) Notwithstanding anything contained in these regulations—

(a) where the danger arises from the presence of inflammable or noxious gas, the provisions of regulation 142 shall apply; and

(b) where the appearance in any part of a mine of smoke or other sign indicates that a fire or spontaneous heating has or may have broken out the provisions of regulation 119 shall apply.

115. **General precautions.**—(1) No person shall cut or remove coal from or in the vicinity of any place unless it is his authorised working place

(2) Every person shall carefully examine his working place before commencing work and also at intervals during the shift. If any dangerous condition is observed, he shall cease all work at that place and shall either take immediate steps to remove such danger or inform an official or the competent person in charge of the mine or district. Where several persons are working together and one of them is in charge, the examination required by this sub-regulation shall be made by the person in charge.

(3) Every person cutting coal and every person operating a coal-cutting machine in any place shall see that the dimensions of that place do not exceed the dimensions specified in that behalf by these regulations.

(4) No person shall work or travel on any ledge or footpath less than 1.5 metres wide, from which he will be likely to fall more than 1.8 metres, unless he is protected by guard rails, fence or rope suitably fixed and sufficiently strong to prevent him from falling.

(5) (a) No person shall carry or be permitted to carry any load along a road or footpath having an inclination of 30 degrees or more from the horizontal.

(b) Every road or footpath, along which loads are carried by human agency, shall comply with the following requirements—

(i) its breadth shall not be less than one metre; and

(ii) at every place where the inclination exceeds 15 degrees from the horizontal, level steps shall be provided such that the vertical height of every step does not exceed 0.18 metres and the distance from the edge to the back is not less than 0.35 metres.

Explanation.—Gang-planks used for loading purposes shall not be deemed to be part of a footpath for the purposes of this sub-regulation, provided that every gang-plank shall be so inclined or constructed as to give a secure foot-hold.

(6) No person shall be employed to lift, carry or move a load so heavy as is likely to cause bodily injury or injury to health of that person. In case of any doubt as to whether risk of bodily injury or injury to health is involved, it shall be referred to the Chief Inspector for decision.

(7) Every person shall ensure that tools, wood, stones or other articles are not put down, or allowed to remain, in or near a shaft or dip gallery where work is going on, in such position as may result in their falling into the shaft, gallery.

(8) No person shall work or be permitted to work alone in any remote part of a mine where, if any accident occurred, he would not soon be discovered or assisted.

(9) No inexperienced person shall be employed in the mine for any work whereby he or other persons can be seriously endangered except under the supervision and guidance of an experienced person.

CHAPTER XI—PRECAUTIONS AGAINST DANGERS FROM FIRE, DUST, GAS AND WATER

116. General precautions against fire.—(1) No oil, grease, canvas or other inflammable material shall be stored in any mine except in a fire-proof receptacle. In case of workings belowground, greasy or oily waste shall be regularly removed to the surface.

(2) No person shall place or throw, or cause or permit to be placed or thrown, any naked light or lamp on or near any timber, wooden structure, or other combustible material.

117. Surface precautions against fire.—(1) All surface structures and supports within a horizontal distance of 10 metres from all entrances to a mine shall be of fire-proof material:

Provided that this sub-regulation shall not apply to temporary structures, supports and coverings at the top of a shaft which is in the course of being sunk and to the small lid of a shaft-covering operated by the rope cappel.

(2) Shale or other carbonaceous material shall not be heaped or dumped, and dead leaves or dry vegetation shall not be allowed to accumulate or remain, and combustible materials other than materials required for use within a period of 24 hours, and inflammable materials shall not be stored, within a distance of 15 metres from any entrance to a mine, which is not effectively sealed off from the workings belowground:

Provided that nothing in this sub-regulation shall prevent the dumping of coal, raised from the mine, near the entrance to the mine.

(3) In opencast workings and, where possible, in any ground broken by extraction of coal, all wild or herbaceous plants shall be removed and all dead leaves and dry vegetation cleared as often as may be necessary to prevent an outbreak of fire.

(4) No person shall deposit any heated material or ashes on any outcrop of coal or in any opencast working or on any ground broken by extraction of coal.

(5) No person shall light a fire or permit a fire to be lighted in any opencast workings or within a distance of 15 metres from any entrance to a mine, except by the permission in writing of the manager and only for a special purpose specified therein. All such permissions shall be recorded in a bound paged book kept for the purpose:

Provided that this sub-regulation shall not apply to boilers other than vertical boilers.

(6) A competent person shall, once at least in every seven days, inspect the top of all entrances to a mine, all opencast workings and any ground broken by extraction of coal in order to ascertain whether the precautions laid down in this regulation have been complied with, and for the presence of any fire that may have broken out or any indications thereof. A record of every such inspection shall be maintained in a bound paged book kept for the purpose, and shall be signed and dated by the person making the inspection.

118. Underground precautions against fire.—(1) (a) No timber or other combustible material shall be used in the construction of, or in connection with, any shaft lining or any room housing any machinery or apparatus belowground.

(b) Wood cuttings shall not be left in any working belowground, but shall be removed to the surface at the end of every shift.

(2) No person shall light a fire or permit a fire to be lighted in any workings belowground:

Provided that—

(i) in the case of a mine to which regulation 144 does not apply, flame or electric welding or repairing apparatus may be used belowground if permitted by an order in writing of the manager. Every such order shall specify the person who shall be in charge of the apparatus; and it shall be the duty of such person to bring the apparatus back to the surface when no longer required belowground; and

(ii) in the case of a mine where the provisions of regulation 144 apply, a flame or electric welding or repairing apparatus may be used belowground if prior permission in writing has been obtained from the Regional Inspector and subject to such conditions as he may specify therein.

(3) (a) No person shall leave a portable light or lamp belowground unless he has placed it in charge of some other person remaining therein.

(b) At the end of a shift unless the mine is worked by a succession of shifts, after all persons have left the mine, all lights shall be extinguished and all power cut off.

(4) (a) No coal, shale or other carbonaceous material shall be left or stacked belowground if it is likely to cause spontaneous combustion.

(b) Proper provision shall be made to prevent an outbreak of fire or spontaneous heating belowground or the spread of fire to the mine from any adjoining mine; and adequate steps shall be taken to control or isolate any such fire or heating that may occur.

(c) Where in the opinion of the Regional Inspector, the provisions of clauses (a) and (b) have not been complied with or where the compliance is inadequate, he may, by an order in writing, require such additional precautions or steps to be taken within such time as he may specify therein. If any such order is not complied with within the specified period, the Regional Inspector may prohibit, until the order has been complied with, the employment in the mine or part, of any person whose employment is not, in his opinion, necessary for the purpose of complying with the order.

119. Precautions after a fire has broken out.—(1) (a) On the appearance in any part of a mine, of smoke or other signs indicating that a fire or spontaneous heating has or may have broken out, all persons other than those whose presence in the mine is deemed necessary for dealing with the fire or heating shall be immediately withdrawn from the mine. No person, other than those required for dealing with or sealing off the fire or heating, shall be re-admitted in the mine until the fire or heating, has been extinguished or effectively sealed off and an examination has been made by the manager or by the under-manager or assistant manager, and the mine has been declared to be safe. A report of every such examination shall be recorded in a bound paged book kept for the purpose and shall be signed and dated by the person making the examination:

Provided that the Regional Inspector may by an order in writing and subject to such conditions as he may specify therein, permit the employment in the mine, of persons other than those required to deal with the fire or heating.

(b) The examination required by clause (a) shall be made with an approved flame safety lamp and a cage containing suitable birds or other means of detecting carbon monoxide gas approved by the Chief Inspector. No additional light shall be used other than an approved safety lamp or torch.

(2) During the whole time that any work of dealing with or sealing off a fire or heating belowground is in progress—

(a) a competent person shall be present on the spot throughout;

(b) approved safety lamps or torches shall be exclusively used in such work:

Provided that where safety lamps or torches are not immediately available, and it is necessary to take immediate steps to deal with an outbreak of fire, the provisions of this clause shall be deemed to have been complied with if persons engaged in dealing with the fire or heating are provided with approved safety lamps or torches as quickly as is reasonably practicable;

(c) there shall be available, at or near the place, two smoke helmets or other suitable apparatus for use in emergency; and

(d) there shall be kept at all places where persons are employed:

(i) a cage containing suitable birds or other means of detecting carbon monoxide gas approved by the Chief Inspector; and

(ii) a flame safety lamp or other means of detecting carbon-dioxide gas approved by the Chief Inspector.

120. Equipment for fire-fighting.—(1) A sufficient supply of sand or combustible dust or sufficient portable fire-extinguishers shall be provided at every entrance to a mine, at every landing and shaft bottom in use, at every engine room and at every other place where timber, canvas, grease, oil or other inflammable material is stored.

(2) At every mine, the following provisions shall be made for dealing with any fire or heating belowground—

(a) A sufficient supply of sand or incombustible dust or sufficient portable fire extinguishers shall be kept at suitable places at the entrance to every district; and

(b) In every mine employing 100 persons or more belowground on any day in that or the previous year—

(i) where pipes containing water under pressure are available, an adequate number of taps, not more than 120 metres apart, shall be provided on such pipes. Hosepipes not less than 60 metres in length, with necessary fittings, shall be kept readily available at suitable places belowground; or

(ii) portable water tanks fitted with hand pressure pumps and hosepipes not less than 60 metres in length and the necessary fittings shall be provided.

(3) (a) Soda acid type extinguishers or water shall not be used for fighting oil or electrical fires.

(b) Foam type extinguishers shall not be used for fighting electrical fires.

(c) Fire extinguishers containing chemicals which are liable, when operated, to give off poisonous or noxious gases, shall not be provided or used belowground;

Provided that nothing in this clause shall be deemed to prohibit the use belowground of fire extinguishers giving off carbon dioxide when operated.

(4) A competent person shall, once at least in every three months, examine every fire-extinguisher so provided, and shall discharge and refill it as often as may be necessary to ensure that it is in proper working order. A report of every such examination or refilling shall be kept in a bound pagged book kept for the purpose, and shall be signed and dated by the person making the examination or refilling.

121. Apparatus for testing for Carbon Monoxide.—In every mine to which regulations 122(2) and 144 apply, there shall be kept at the mine constantly available for use two or more suitable birds or other means of detecting carbon monoxide gas approved by the Chief Inspector;

Provided that the Regional Inspector may, by an order in writing, require compliance with this regulation in the case of any other mine also.

122. Precautions when a fire exists belowground.—(1) In every mine in which a fire or spontaneous heating exists in workings belowground (whether such fire has been sealed off by means of suitable stoppings or not), no work whatsoever shall be done in any seam or section lying either above or below another seam or section on fire or believed to be on fire, except with the permission in writing of the Chief Inspector and subject to such conditions as he may specify therein.

(2) Approved safety lamps or torches shall be exclusively used in a mine in which there is a fire belowground, whether such fire is sealed off by stoppings or not:

Provided that the Chief Inspector may, by an order in writing and subject to such conditions as he may specify therein, exempt any mine or part thereof from the operation of this sub-regulation if in his opinion compliance with these provisions is not necessary.

(3) In every mine to which sub-regulation (2) and regulation 144 apply, arrangements shall be made, once at least in every 30 days, to ascertain the atmospheric conditions behind the stoppings built to seal off an area of old workings or goaf or a fire or spontaneous heating, unless such stoppings are capable of resisting the force of an explosion.

(4) (a) Every stopping erected to isolate or control a fire or spontaneous heating belowground shall be numbered, and shall be of adequate strength and so maintained as to prevent any leakage of air or gas through it. Where water is likely to accumulate behind any such stopping, there shall be provided in the stopping a suitable pipe or other device to drain away the water without permitting any leakage of air or gas etc.

(b) Where in any mine or part thereof the provisions of clause (a) have not been complied with, or where in the opinion of the Regional Inspector the steps so taken are inadequate, he may give notice in writing to the owner, agent or manager, requiring him to take such protective measures, within such time,

as he may specify therein. In case of non-compliance with the requirements of the notice, the Regional Inspector may, by an order in writing, prohibit until the requirements of the notice have been complied with the employment in the mine or part, of any person whose employment is not necessary for the purpose of complying with the requirements aforesaid.

(5) A competent person shall, once at least in every seven days, inspect all stoppings erected to isolate or control a fire or spontaneous heating belowground. During every such inspection, he shall ascertain the general condition of every stopping, check it for leakage and presence of gas, and ascertain the temperature and humidity of the atmosphere outside the stopping. For every stopping, he shall place his signature, with date, on a check-board provided for the purpose at a suitable position on the stopping; and this record shall be maintained for a period of not less than three months. A report of every such inspection shall also be recorded in a bound paged book kept for the purpose and shall be signed and dated by the person making the inspection:

Provided that the Regional Inspector may, by an order in writing, require such inspection to be made at such shorter intervals as he may specify therein.

123. Precautions against dust.—To prevent the liberation and accumulation of dust and the propagation of air-borne dust, the following provisions shall have effect, namely—

(1) (a) Dust shall be suppressed as close as possible to its source of formation.

(b) As far as practicable the velocity of air in any road or working place shall be such as not to raise dust in the atmosphere.

(2) (a) The design, material, arrangement and condition of picks on a coal-cutting machine shall be such as to reduce the production of fine dust to the minimum. Where a chain machine is used, the chain shall always, while in use, be equipped with a complete set of picks.

(b) Where the Chief Inspector so requires, every mechanical coal-cutter shall be fitted with suitable sprays and jets of water so as to damp the cuttings as they are formed.

(3) While drilling in stone:

(a) the production of dust shall be reduced by—

(i) using drill-bits which are sharp and of proper shape;

(ii) keeping suitable air pressure on the bit; and

(iii) clearing the cuttings from the bit;

(b) except in naturally wet ground, no person shall use, or cause or permit to be used, any power-drill unless a jet of water is directed on to the cutting edge of the drill throughout the drilling operations, or other equally efficient device approved by the Chief Inspector is provided so as to prevent the atmosphere being charged with dust:

Provided that where drilling is done by hand, it shall be sufficient if holes are kept constantly moist during such drilling; and

(c) where wet pneumatic drilling is performed, a sufficient quantity of water shall be made to flow through the drill to wet the cuttings. The water shall be turned on before turning on compressed air to the drill.

(4) In every part of a mine which is not naturally wet throughout, the floor, roof and sides of the workings shall, as far as practicable, be kept clear of any accumulation of coal dust.

(5) (a) In every mine, the precautions against dangers from coal dust laid down in clause (b) shall be observed—

(i) in every airway, haulage, tramming, conveyor, and travelling roadway, which is not naturally wet throughout; and

(ii) in every place within 120 metres of an area which has been or is being sealed off on account of fire or spontaneous heating, or in which extraction of pillars is in hand or is about to commence:

Provided that the Regional Inspector may, by an order in writing, also require the observance of these precautions in any other place if in his opinion they are necessary for ensuring the safety of persons.

(b) Every such road and place shall:—

- (i) be treated with fine incombustible dust in such manner and at such intervals as will ensure that the dust on the floor, roof and sides throughout shall always consist of a mixture containing not less than 70 per cent of incombustible matter; or
 - (ii) be treated with water in such manner and at such intervals as will ensure that the dust on the floor, roof and sides throughout is always combined with not less than 30 per cent by weight of water in intimate mixture; or
 - (iii) be treated in such manner as the Regional Inspector may approve by an order in writing.
- (c) The incombustible dust used for the purpose of this sub-regulation shall be:—
- (i) free from any material containing injurious free silica;
 - (ii) of such fineness and character that it is readily dispersable into the air and that, when used in places which are not directly wetted by water from the strata, it does not cake but is dispersed into the air when blown upon with the mouth or by a suitable appliance; and
 - (iii) as far as practicable, light in colour.

No such incombustible dust shall continue to be used if it is found by tests, which shall be carried out once at least in every 30 days, not to comply with the foregoing requirements

(6) For the purpose of ensuring adequate treatment of coal dust in places specified in clause (a) of sub-regulation (5), systematic samples of the dust shall be collected, in a manner approved by the Regional Inspector, from all such roads and places and tested and analysed once at least in every 30 days. A record of such samples and analysis shall be kept in a bound paged book kept for the purpose, and shall be counter-signed and dated by the manager.

(7) (a) Every tub shall be so constructed and maintained as to prevent, as far as practicable, dust escaping through its sides or floor.

(b) The vicinity of the top of the downcast shaft shall, as far as practicable, be kept clear of cinder heaps, sand, mortar, cement and other dry fine material, and such material shall be so handled as to prevent it from becoming airborne.

(c) If in any operation of loading, unloading, conveying, screening, cleaning, sorting, crushing or dressing of coal, or of collection of coal dust, dust is likely to be produced or raised in such quantity as may be injurious to the health of persons, effective exhaust ventilation or efficient watering or other arrangements shall be provided and used.

(8) In case of a mine where, owing to special difficulties, it is not possible to use water for dust suppression as required by sub-regulations (3), (5) and (7), the Chief Inspector may, by an order in writing and subject to such conditions as he may specify therein, grant exemption from the provisions thereof.

(9) Where dust cannot be sufficiently suppressed to safe limits, the Chief Inspector may, by an order in writing, require that every person exposed to such dust shall be provided with a suitable respirator.

(10) The manager, the undermanager and the assistant manager shall take steps to ensure that every device used for the suppression of dust and every respirator is properly used and maintained.

(11) If any doubt arises as to whether any place is naturally wet or whether the steps taken to suppress dust under this regulation are adequate, it shall be referred to the Chief Inspector for decision.

124. Precautions against irruption of gas.—(1) In a mine where safety lamps are not required to be used by or in pursuance of these regulations if any working has approached within 30 metres of a known dyke, fault or other geological disturbance, the competent person appointed to make inspections under regulation 113 shall, during the course of such inspection, test for the presence of inflammable gas with an approved flame safety lamp. During

such inspection, no other lamp or light other than an approved safety lamp or torch shall be used.

(2) Where any working is extended to within 30 metres of any goaf or disused workings containing or likely to contain an accumulation of inflammable or noxious gases, there shall be maintained at least one bore-hole not less than 1.5 metres deep in advance of the working. The operation of drilling the bore-hole shall be carried out under the supervision of a competent person, and no lamp or light other than an approved safety lamp or torch shall be used in any such working.

125. Recovery and exploratory work.—(1) After an explosion of inflammable gas or coal dust has occurred in a mine, only such persons as are authorised by the manager or by the principal official present at the surface, shall be allowed to enter the mine.

(2) When it is intended or proposed to reopen a mine or part thereof, which has been isolated, sealed off or flooded with water to deal with a fire or spontaneous heating, the owner, agent or manager shall, not less than 14 days before the commencement of such work, give notice in writing of such intention or proposal to the Regional Inspector and the Chief Inspector.

(3) Where it is intended to carry out any exploratory work in a mine or part belowground likely to contain irrespirable atmosphere:—

- (a) no party of less than three persons shall be allowed to proceed to carry out such work; and
- (b) every party shall carry a cage containing suitable birds or other means of detecting carbon monoxide gas approved by the Chief Inspector and also an approved flame safety lamp. No other lamp or light other than an approved lamp or torch shall be used during such exploratory work.

126. Danger from surface water.—(1) Where any mine or part thereof is so situated that there is any danger of inrush of surface water into the mine or part, adequate protection against such inrush shall be provided and maintained. In case of any doubt as to whether such protection is adequate or not, it shall be referred to the Chief Inspector for decision.

(2) No workings shall be made in any mine vertically below:—

- (a) any part of any river, canal, lake, tank or other surface reservoir; or
- (b) any spot lying within a horizontal distance of 15 metres from either bank of a river or canal or from the boundary of a lake, tank or other surface reservoir,

except with the permission in writing of the Chief Inspector and subject to such conditions as he may specify therein.

(3) Every application for permission under sub-regulation (2) shall be accompanied by two copies of a plan and section showing the existing position of the workings of the mine, the proposed layout of workings, the depth of the workings from the surface, the position and depth of any goaves in every seam in the neighbourhood, all faults, dykes and other geological disturbances and such other particulars as may affect the safety of the mine or of the persons employed therein.

Explanation.—Where sand or alluvium are lying in the course of a river, canal, lake, tank or reservoir, the depth from the surface shall be reckoned from the surface of the hard ground underlying such sand or alluvium.

127. Danger from underground inundation.—(1) Proper provision shall be made in every mine to prevent irruption of water or other liquid matter from the workings of the same mine or of an adjoining mine.

(2) Where work is being done in:—

- (i) any seam or section below another seam or section, or
- (ii) any place in a seam or section, which is at a lower level than any other place in a lower seam or section, or
- (iii) any place in a seam approaching a fault passing through an upper seam or section, which contains or may contain an accumulation of water or other liquid matter, adequate precautions shall be taken against an irruption of water or other liquid matter into the workings.

(3) No working which has approached within a distance of 60 metres of any disused or abandoned workings (not being workings which have been examined and found to be free from accumulation of water or other liquid matter), whether in the same mine or in an adjoining mine, shall be extended further except with the prior permission in writing of the Chief Inspector and subject to such conditions as he may specify therein:

Provided that if any heavy seepage of water which is not normal to the seam is noticed in any working approaching, but not within 60 metres of, any such disused or abandoned working, such working shall be immediately stopped, and the Chief Inspector and the Regional Inspector shall forthwith be informed about the occurrence. The working shall not be extended further except with the prior permission in writing of the Chief Inspector and subject to such conditions as he may specify therein.

Explanation.—For the purpose of this sub-regulation, the distance between the said workings shall mean the shortest distance between the workings of the same seam or between any two seams or sections, as the case may be, measured in any direction whether horizontal, vertical or inclined.

(4) Every application for permission under sub-regulation (3) shall be accompanied by two copies of a plan and section showing the outline of such disused or abandoned workings in relation to the workings which are approaching the said workings, and such other information as may be available in respect of the said workings.

(5) No such working shall exceed 2.4 metres in width or height; and there shall be maintained at least one bore-hole near the centre of the working face, and sufficient flank holes on each side and where necessary, bore-holes above and below the working, at intervals of not more than five metres. All such bore-holes shall be, and shall be constantly maintained, at sufficient distance in advance of the working, and such distance shall in no case be less than three metres. These precautions shall be carried out under the direct supervision of a competent person specially authorised for the purpose.

(6) The precautions laid down in sub-regulation (5) shall also be observed in any other working where any heavy seepage of water is noticed whether approaching disused or abandoned workings or not.

128. Intentional flooding.—(1) When the owner, agent or manager intends or proposes, by introducing water from the surface or from any other part of the mine or from an adjacent mine, to flood any part of the workings of his mine, he shall give, in writing, not less than 14 days' notice of such intention or proposal to the Chief Inspector and the Regional Inspector and to the management of all adjoining mines and of such other mines as might be affected by such flooding:

Provided that the Regional Inspector may, by an order in writing and subject to such conditions as he may specify therein, permit such operations to be commenced on any day prior to the expiry of the said 14 days;

Provided further that the Regional Inspector may, by an order in writing, either prohibit any such operation or require that such operation shall not be commenced until such precautions as he may specify have been taken to his satisfaction.

Explanation.—For the purposes of this sub-regulation, a mine shall have the meaning assigned to it under regulation 30.

(2) If the operations in respect of which notice is given under sub-regulation (1), are not commenced within 60 days from the expiry of the said 14 days, the notice shall be deemed to have lapsed and the provisions of sub-regulation (1) shall apply as if no such notice had been given.

129. Construction of water dam etc.—(1) Where in any mine it is intended to construct a reservoir, dam or other structure to withstand a pressure of water or other material which will flow when wet, or to control an inrush of water, the owner, agent or manager shall give in writing not less than 14 days' notice of such intention to the Regional Inspector. Every such notice shall be accompanied by two copies of plans and sections showing the design and other details of the proposed construction:

Provided that where the safety of the mine or of the persons employed therein is seriously threatened, the provisions of this regulation shall be deemed to have been complied with if the said notice is given to the Regional Inspector as soon as the work of construction is commenced:

Provided further that where such a reservoir, dam or other structure was constructed before the coming into force of these regulations, the said copies of the plans and sections shall be submitted to the Regional Inspector within three

months of the coming into force of these regulations. Where these details are not available, the Regional Inspector shall be informed of the fact within the aforesaid period.

(2) The Regional Inspector may, by an order in writing, require such modification or alteration to be made in the design of any such reservoir, dam or structure, as he may specify therein.

CHAPTER XII—VENTILATION.

130. Standard of ventilation.—(1) It shall be the duty of the owner, agent or manager of every mine to take such steps as are necessary for securing that there is constantly produced in all parts of the mine belowground which are not sealed off, ventilation adequate to clear away smoke and steam; to dilute gases that are inflammable or noxious so as to render them harmless; to provide air containing a sufficiency of oxygen; and to prevent such excessive rise of temperature or humidity as may be harmful to the health of persons.

(2) For the purpose of this regulation, a place shall not be deemed to be in a safe state for persons to work or pass therein if the air contains either less than 19 percent of oxygen or more than 0·5 percent of carbon dioxide or any noxious gas present in quantity likely to affect the health of any person; and such place shall not be deemed to be normally kept free from inflammable gas if the percentage of such gas at any point in that place exceeds one and a quarter.

(3) In every mine to which regulations 122(2) and 144 apply, ventilation as aforesaid shall be produced by a suitable mechanical ventilator.

(4) If with respect to any mine or part thereof the Regional Inspector is of the opinion that the ventilation is not adequate, he may, by an order in writing, require the installation and maintenance of such a mechanical ventilator as is capable of producing adequate ventilation in the mine or part.

131. Mechanical ventilators and their fittings.—(1) Every mechanical ventilator installed after the coming into force of these regulations shall be installed on the surface.

Provided that this provision shall not be construed as preventing the installation belowground of mechanical ventilators—

- (a) when such ventilators are auxiliary only, and the contrivance whereby the main ventilation is produced is placed on the surface and is capable of producing such amount of ventilation as, in an emergency, would be sufficient for the safety of the persons employed belowground; or
- (b) when such ventilators afford a complete additional system of ventilation; and the ventilation appliance provided on the surface is capable of producing such sufficient amount of ventilation as aforesaid, is immediately available for use in an emergency and is kept in an effective condition and is used once at least in every seven days.

(2) Every mechanical ventilator shall be installed in a fire-proof housing situated at a safe distance from the opening of shaft; and every mechanical ventilator, other than an auxiliary fan, shall be so designed, installed and maintained that the current of air can be reversed when necessary.

(3) In every mine to which regulation 144 applies, if electricity is used for driving the mechanical ventilator current should be supplied to the drive-motor of the ventilator through a separate circuit from the main distribution point of the mine.

(4) There shall be provided and maintained at every main mechanical ventilator—

- (a) a suitable pressure-recording gauge or water-gauge; and
- (b) except where the ventilator is driven by a Constant Speed Drive, a recording instrument by which the speed of the ventilator shall be continuously registered.

(5) At every shaft or incline ordinarily used for lowering or raising of persons or material, where a mechanical ventilator is installed, there shall be provided a properly constructed air-lock;

Provided that unless the Regional Inspector so requires by an order in writing, the provisions of this sub-regulation shall not apply to a shaft or incline where a mechanical ventilator was installed before the coming into force of these regulations.

(6) The flow of air produced by a mechanical ventilator shall, as far as practicable, be so arranged as to aid the natural ventilation.

(7) Every mechanical ventilator shall be in charge of a competent person appointed for the purpose, who shall not be entrusted with any other additional duties which may require him to go outside the fan house or which may interfere with his duties as incharge of the mechanical ventilator.

132. Restriction on installation belowground of mechanical ventilators in gassy mines etc.—In every mine to which regulations 122(2) and 144 apply, the following provisions shall have effect in relation to the installation belowground of mechanical ventilators—

(1) No mechanical ventilator, other than an auxiliary fan, shall be installed belowground unless the manager is satisfied, as a result of a survey of the ventilation of every part of the mine liable to be affected, that such installation is necessary or expedient for the proper ventilation of the mine and that it should be installed. Seven days' prior notice of every such installation, together with particulars of the survey aforesaid, shall be sent to the Regional Inspector.

Explanation: The shifting of a ventilator from one place to another shall be deemed to be an installation of a ventilator for the purpose of this regulation.

(2) The Regional Inspector may at any time, by an order in writing, require the use of any ventilator installed belowground to be discontinued.

133. Installation and maintenance of mechanical ventilators.—(1) In every mine to which regulation 144 applies, where a mechanical ventilator is electrically driven, the drive-motor, unless it is so constructed, installed, protected, operated and maintained as to prevent the risk of open sparking, shall not be placed in a return airway.

(2) The installation and maintenance of every mechanical ventilator shall be supervised and controlled by a competent person appointed for the purpose; and except in an emergency, no person shall start, stop, remove or in any way alter, repair or interfere with any such ventilator, except by or on the authority of the manager or other official authorised in this behalf. Particulars of every such stoppage or alteration, together with the duration thereof, shall be recorded in a bound paged book kept for the purpose.

(3) A competent person appointed for the purpose shall, once at least in every seven days, examine every mechanical ventilator in use and shall record the result thereof in a bound paged book kept for the purpose. Any serious defect revealed by such examination shall, without delay, be brought to the notice of the manager.

(4) (a) In every mine in which a mechanical ventilator is in use, the quantity of air shall, once at least in every 14 days, be measured—

(i) in every main intake and return airway of every seam or section, as near as practicable to the entrance to the mine;

(ii) in every split, as near as practicable to the point at which the split commences;

(iii) in every ventilating district, as near as practicable to the point where the air is subdivided at the end of a split and also where it enters the first working place; and

(iv) any other point that the Regional Inspector may, by an order in writing, specify.

The measurements shall be entered in a bound paged book kept for the purpose:

Provided that in a mine to which regulations 122(2) and 144 do not apply, it shall be sufficient to take and record the air measurement once in every 30 days.

(b) The measurements referred to in clause (a) shall also be taken and recorded whenever the system of ventilation is so altered as to substantially affect or likely to affect the ventilation of the mine.

134. Standing Orders.—(1) The manager of every mine in which a mechanical ventilator other than an auxiliary fan is installed, shall submit to the Regional Inspector, within 60 days of the coming into force of these regulations, or in

the case of a new installation, within 30 days of the installation, Standing Orders specifying the action that shall be taken with respect to the withdrawal of persons from the mine or part thereof in the event of a stoppage of the ventilator.

(2) The Regional Inspector may, by an order in writing approve of such Standing Orders, either in the form submitted to him or with such additions and alterations as he may think fit; and the Standing Orders so approved shall be enforced at the mine.

(3) A copy of the Standing Orders shall be posted at conspicuous places in the mine, both above and belowground.

135. Splits and airways.—(1) For the purpose of ventilation, every mine shall be divided into such number of districts or splits as to ensure that separate current of fresh air is made available in every such district or split.

(2) The intake air shall be so arranged as to travel away from all stagnant water.

(3) In every mine to which regulations 122(2) and 144 apply, for every ventilating district there shall be provided two main intake airways, one of which shall be used as a travelling roadway:

Provided that if the Regional Inspector is satisfied that compliance with this regulation is not reasonably practicable, he may, by an order in writing and subject to such conditions as he may specify therein, grant exemption from the provisions thereof.

(4) Every connection between a main intake airway and a main return airway shall, until it has ceased to be required and has been sealed off, be provided with at least two doors so spaced that whenever one door is opened, the other door can be kept closed. Steps shall be taken to ensure that at least one of the doors is always closed. Any such connection which has ceased to be required shall be effectively sealed.

136. Brattices, doors, stoppings and air-crossings.—(1) There shall be provided and maintained in every mine, such number of air-crossings, stoppings, doors, brattices and other devices as may be adequate to ensure compliance with the provisions of regulation 130. If any doubt arises as to the adequacy of such ventilation devices, it shall be referred to the Chief Inspector for decision.

(2) (a) The space between the frame of every ventilation door and the roof and sides of the roadway, shall be built up with masonry or concrete, not less than 25 centimetres in thickness.

(b) Every such door shall be self-closing; and whenever opened, it shall be closed as soon as possible, and shall not be propped or fixed so as to remain open.

(c) If such door is required to be frequently kept open for the passage of men or materials, there shall be, throughout every working shift, a door attendant at the door.

(d) If a door is not in use, it shall be taken off its hinges and placed in such position that it shall not cause any obstruction to the air current.

(3) (a) Every stopping between the main intake and main return airways shall be constructed of masonry or brickwork, not less than 25 centimetres in thickness or such greater thickness as may be required by the Regional Inspector, and shall be faced with a sufficient thickness of lime or cement plaster to prevent leakage of air.

(b) Every stopping in use shall be kept accessible for inspection.

(4) The partitions and walls of every air-crossing shall be not less than 25 centimetres in thickness if constructed of masonry or of concrete not properly reinforced, and not less than 15 centimetres in thickness if constructed of properly reinforced concrete.

(5) Every air-crossing, ventilation stopping, door or brattice shall be maintained in efficient working order and good repair.

(6) A competent person shall, once at least in every 14 days, examine every airway, air-crossing, ventilation stopping and door in use, and shall record the result thereof in a bound paged book for the purpose, and shall sign the same and date his signature.

137. Auxiliary fans.—(1) Every auxiliary fan—

(a) shall be installed, located and worked in such a manner that—

(i) a sufficient quantity of air shall, at all times, reach it so as to ensure that it does not re-circulate air; and

- (ii) there is no risk of the air which it circulates being contaminated by any substantial quantity of inflammable or noxious gases or dust;
 - (b) shall, whether driven electrically or otherwise, be efficiently connected with earth so as to avoid the accumulation of an electrostatic charge; and
 - (c) shall have an air-duct for conducting the air to or from the face or blind end; and such air-duct shall be so maintained as to minimise any leakage of air and to ensure an adequate supply of air to within 4.5 metres of the face or blind end.
- (2) No auxiliary fan shall be started, stopped, removed, replaced or in any way altered or interfered with, except by or on the authority of an official.
- (3) No person shall enter or remain in any place which is dependent for its ventilation on an auxiliary fan, unless such fan is operating efficiently. Whenever the ventilation of any such place has been interrupted, whether by the stoppage of the fan or otherwise, no person shall so enter or remain therein except for the purpose of restoring the ventilation or unless the place has been examined by a competent person and declared safe.
- (4) In every mine to which regulations 122(2) and 144 apply—
- (a) two or more auxiliary fans shall not be installed in the same ventilating district or split, except with the permission in writing of the Regional Inspector and subject to such conditions as he may specify therein. The application made for any such installation shall be accompanied by a plan showing the general system of ventilation, the quantity of air flowing in the split and the proposed position of the fans; and
 - (b) the Regional Inspector may at any time, by an order in writing, require that the use of any auxiliary fan shall be discontinued.

138. Precautions against fire in ventilation appliances.—The covering of every shaft, sealed off or covered for ventilation purposes, every fan drift, duct or casing and every part of a mechanical ventilator or fan within such drift, duct or casing, and every air-crossing and ventilation door shall be constructed of fire-proof material:

Provided that this regulation shall not apply to the small lid of a shaft-covering operated by the rope cappel.

139. Ventilation plans to be brought up-to-date.—As soon as any alteration is made in the ventilation of a mine, involving the erection or removal of an air-crossing or stopping or the alteration in the position of or installation of a ventilator belowground, the erection, removal, alteration or installation, as the case may be, shall be shown on the ventilation plan maintained under regulation 59.

140. Obstructions, interruptions and alterations etc.—(1) No material or debris shall be allowed to accumulate in any roadway and working belowground so as to impede the ventilation.

(2) Every roadway and working belowground which is not adequately ventilated shall be fenced so as effectively to prevent persons entering the same.

(3) If any person becomes aware of any obstruction in or interference with or deficiency of, ventilation in any mine or part, he shall—

(a) if it falls within his power to remedy such obstruction, interference or deficiency, immediately take steps to do so; or

(b) cease all work at that place, and shall forthwith inform his superior official of such obstruction, interference or deficiency.

(4) Whenever there is any interruption of ventilation by the stoppage of any mechanical ventilator, including an auxiliary fan, installed belowground, the official in charge of the mine or part shall immediately take precautionary measures, including withdrawal of men, if necessary, against dangers that may arise out of non-compliance with the provisions of regulation 130, to restore the ventilation in the mine or part.

(5) No person shall alter the general system of ventilation in any mine or part except with the written authority of the manager:

Provided that in an emergency, an official of the mine may carry out such alteration as he may deem necessary for the safety of persons, but he shall as soon as possible inform his superior official and the manager about the same in writing.

141. Precautions against gas during de-watering and re-opening.—(1) No dis-used mine or shaft shall be de-watered except under the constant supervision of a competent person; and during such de-watering, approved safety lamps or torches shall be exclusively used, and there shall also be kept burning at every place where persons are at work at least one approved flame safety lamp.

(2) (a) The first inspection of a mine or part which is re-opened after a discontinuance of mining operations for a period exceeding seven days and of any part of a mine after being de-watered, shall be made by a competent person with an approved flame safety lamp; and during such inspection, no additional light or lamp other than an approved electric torch or lamp shall be used.

(b) The result of every such inspection shall be recorded in a bound paged book kept for the purpose, and shall be signed and dated by the person making the inspection, and countersigned and dated by the manager.

142. Precautions against inflammable and noxious gases.—(1) For the purpose of this regulation, inflammable gas shall be deemed to have been found or detected when it is indicated by the lowered flame safety lamp or, where methane indicators are used, they indicate one and a quarter per cent or more of inflammable gas.

(2) When any person detects the presence of inflammable gas he shall not brush or waft it out, but shall immediately withdraw from the place and shall inform his superior official about the same.

(3) Where in any place in a mine, inflammable or noxious gas is detected, all persons shall be withdrawn from the place, and the place shall be immediately fenced off so as to prevent persons inadvertently entering the same. The overman or other competent person in charge shall, without delay, take steps to remove the gas by improving the ventilation.

(4) During the removal of such gas all persons, except those necessary for such removal, shall be withdrawn from the return side of the ventilating district in which the gas has been detected unless the quantity of gas is, in the opinion of the overman or other competent person, so small that no such withdrawal is necessary:

Provided that where the danger arises from the presence of inflammable gas, no naked light shall be used in the ventilating district in which the gas is detected.

(5) No person shall be re-admitted into the place where the gas was detected until a competent person has examined the place and has reported that the place is free from gas. Every such examination shall be made with an approved flame safety lamp and, in the case of noxious gas, also with a cage containing suitable birds or other means of detecting carbon monoxide gas approved by the Chief Inspector.

(6) Particulars of every occurrence referred to in sub-regulation (2) and of every examination made under sub-regulation (5), together with a statement as to where and when the gas was found and when it was removed, and in case of inflammable gas, the percentage thereof shall be recorded in a bound paged book kept for the purpose. Every such entry shall be signed and dated by the competent person making the report, and countersigned and dated by the manager.

143. Inspection of unused workings for gas.—In any seam in a mine, to which regulation 122(2) and 144 apply, or where the Regional Inspector may require by an order in writing, all unused workings which have not been sealed off, shall once at least in every seven days be inspected by a competent person for the presence of inflammable or noxious gas. A report of every such inspection shall be recorded in a bound paged book kept for the purpose, and shall be signed and dated by the person who made the inspection.

144. Safety lamps to be used in gassy mines.—No lamp or light other than an approved safety lamp or torch or other installation permitted under the Indian Electricity Rules, 1956, shall be used or permitted to be used belowground in any mine,—

(a) in any seam in which an explosion or ignition of inflammable gas has occurred;

(b) in any ventilating district in which inflammable gas has been found; and

(c) in any place in which, in the opinion of the Regional Inspector, inflammable gas is likely to be present in such quantities as to render the use of naked lights dangerous:

Provided that if safety lamps are not immediately available in the case of any mine to which clauses (b) and (c) apply, the Chief Inspector may, by an order in writing and subject to such conditions as he may specify therein, grant a temporary exemption from the operation thereof until such time as safety lamps can be obtained:

Provided further that the Chief Inspector may, by an order in writing and subject to such conditions as he may specify therein, exempt any mine or part thereof from the operation of this regulation on the ground that on account of its special character the use of safety lamps is not necessary therein.

145. Determination of percentage of inflammable gas and of environmental conditions.—(1) Where electric energy is used in any ventilating district in a mine to which regulation 144 applies, determination shall be made of the percentage of inflammable gas present in the general body of air; and the following provisions shall apply in respect of such determinations, namely—

(a) The determinations shall be made by a competent person, and either by means of an apparatus of a type approved for the purpose by the Chief Inspector, or by analysis of samples of air. If determinations are made by the analysis of air, the samples shall be analysed within four days of the taking thereof.

(b) The determinations shall be made on samples of air taken, as the case may be, at suitable points fixed by the manager, on the intake side of the first working place, and on the return side of the last working place in the district:

Provided that where the Regional Inspector is of the opinion that the location of any such point is unsuitable, he may, by an order in writing, require the manager to fix some other point or points in substitution thereof.

(c) The determinations shall be made on samples of air taken, as the case may be, once at least in every seven days, so however that—

(i) if any determination shows the percentage of inflammable gas to exceed 0.8, determinations shall be made on samples of air taken, unless the Regional Inspector otherwise permits by an order in writing and subject to such conditions as he may specify therein, at intervals not exceeding 24 hours for so long as such content exceeds that percentage and for the seven next following days; and

(ii) if the determinations made during the 30 days immediately preceding any day have shown the percentage of inflammable gas to be below 0.6, it shall be sufficient to make such determinations or take such samples, once in every 30 days for so long as such content does not exceed that percentage:

Provided that when any alteration is made in the system of ventilation so as to substantially affect or likely to affect the ventilation of the mine, such determination shall be made within 24 hours of such alteration.

(d) Particulars of every such determination shall be recorded in a bound page book kept for the purpose.

(e) If any determination in any ventilating district shows the percentage of inflammable gas to exceed one and a quarter, the supply of electric energy shall be cut off immediately from all cables and apparatus in the district, and a written report thereof submitted to the Regional Inspector forthwith.

(2) If the Regional Inspector so requires by an order in writing in respect of any mine having workings belowground, determinations shall, once at least in every 30 days, be made of temperature, humidity and such other environmental conditions at such points as the Regional Inspector may specify in the order.

146. General precautions in gassy mines.—In every mine or part thereof to which regulation 144 applies, the following provisions shall have effect, namely—

(1) In every gallery, the current of air shall be conducted to the working face by means of suitable brattices or air-pipes.

(2) No narrow 'main' or advance gallery shall be driven more than three metres ahead of the widened gallery.

(3) Every stopping between the main intake and the main return airways shall be substantially built and every air crossing shall be so constructed and maintained as to withstand the force of an explosion.

(4) The main air current shall be so split and coursed that an air current which ventilates a goaved out area, whether packed or unpacked, or any disused workings shall not, except with the prior permission in writing of the Regional Inspector and subject to such conditions as he may specify therein, ventilate any workings where coal is being extracted.

(5) No major alteration shall be made in the system of ventilation except with the prior permission in writing of the Regional Inspector and subject to such conditions as he may specify therein:

Provided that where the safety of the mine or of the persons employed therein is seriously threatened, the provision of this sub-regulation shall be deemed to have been complied with, if information of such alteration is sent to the Regional Inspector forthwith.

(6) Except in an emergency, when a major alteration is made in the system of ventilation, only such persons as are engaged in making the alteration shall be present belowground.

147 Contrabands.—In every mine to which regulations 122(2) and 144 apply, the following provisions shall have effect, namely—

(1) No person shall have in his possession belowground any cigar, cigarette, 'biri' or other smoking apparatus, or any match or other apparatus of any kind capable of producing a light, flame or spark:

Provided that nothing in this sub-regulation shall be deemed to prohibit the use belowground of any apparatus for the purpose of shot-firing or of relighting safety lamps, of a type approved by the Chief Inspector.

(2) For the purpose of ascertaining whether any person proceeding belowground has in his possession any article as aforesaid, a competent person other than the banksman, if any, shall be appointed to search every such person immediately before he enters the mine. The competent person shall be on duty throughout the shift, and no duties other than those under this regulation and regulation 155 (2) shall be entrusted to him.

(3) The competent person so appointed shall make a thorough search for the articles aforesaid, and in particular shall—

(a) search or turn out all pockets;

(b) pass his hand over all clothings; and

(c) examine any article in the possession of the person searched.

Such search shall be made every time a person proceeds belowground notwithstanding that he has been so searched previously also.

(4) If the competent person suspects that the person searched is concealing any article as aforesaid, he shall detain him, and as soon as possible refer the matter to the manager or undermanager or assistant manager. No such person shall be allowed to enter the mine until the manager or other superior official is satisfied that the person has no such article in his possession.

(5) Any person who refuses to allow himself to be so searched or, who on being searched is found to have in his possession any of the articles aforesaid, shall be guilty of an offence against this regulation.

148. Underground relighting stations.—In every mine to which regulations 122(2) and 144 apply, lamp stations for relighting safety lamps may be fixed by the manager at suitable places belowground. Every such station shall be legibly marked 'RELIGHTING STATION'; shall be situated in a main intake airway, and shall be placed in charge of a competent person. No person shall be appointed as a competent person under this regulation unless he holds a Gas-testing Certificate.

149. Management etc. of gassy mines.—(1) Notwithstanding anything contained in regulation 31, no person shall act, or continue to act, or be appointed, as manager of a mine to which regulation 144 applies, unless he holds a First Class Manager's Certificate.

(2) In every mine to which regulation 144 applies and the average output of which, as defined in regulation 30, exceeds 2,500 tons, the manager shall be assisted by a Ventilation Officer responsible for supervising the maintenance of the ventilation system of the mine in accordance with the provisions of these regulations. No person shall be appointed a Ventilation Officer under this sub-regulation unless he holds—

(a) in the case of a mine the average output of which, as defined in regulation 30 exceeds 5,000 tons, a Manager's Certificate; and

(b) in every other case, an Overman's Certificate.

CHAPTER XIII—LIGHTING AND SAFETY LAMPS

150. **Whitewashing.**—The roof and sides of the following places belowground in a mine shall be kept effectively whitewashed—

- (a) every shaft inset and shaft bottom or siding and every bypass which is in regular use;
- (b) the top and bottom of every haulage plane, every regular stopping place, siding, landing, passbye and junction, except within 100 metres of the face;
- (c) every travelling roadway;
- (d) every room and place containing any engine, motor or other apparatus; and
- (e) every first aid station belowground.

151. **General lighting.**—(1) Adequate general lighting arrangements shall be provided during working hours—

- (a) on the surface where the natural lighting is insufficient: in every engine house, in the vicinity of every working shaft, at every open-cast working, at every shunting or marshalling yard, and at every place where workpersons have to work; and
- (b) belowground:
 - (i) at every shaft inset and shaft bottom or siding which is in regular use;
 - (ii) in every travelling roadway normally used by 50 or more persons during any shift:

Provided that the provisions of this clause shall be deemed to have been complied with where electric lamps or lights are provided to every workperson;

 - (iii) at the top and bottom of every self-acting incline in regular use;
 - (iv) at every place on a haulage roadway, at which tubs are regularly coupled or uncoupled or attached to or detached from a haulage rope;
 - (v) at every place at which tubs are regularly filled mechanically;
 - (vi) at every room and place containing any engine, motor or other apparatus
 - (vii) at every place where any pillar is under extraction; and
 - (viii) at every first aid station belowground;

Provided that in mines to which regulation 144 applies, the lighting fixtures shall comply with the provisions of the Indian Electricity Rules, 1956.

(2) The lighting provided in a mine shall, as far as possible, be so arranged as to prevent glare or eye-strain.

(3) Where electric energy is available at the mine, the lighting arrangement made under sub-regulation (1) shall be by electrical means.

(4) Where electric lighting is used, an additional light or lamp having no connection with the electric supply shall be kept continuously burning—

- (i) belowground, in every shaft inset and shaft bottom or landing in regular use and in every engine room; and
- (ii) on the surface, after dark, at the top of every working shaft and in every engine room.

(5) Every electrical lamp-fitting shall be so constructed and fitted as to protect it from accidental damage; and adequate precautions shall be taken to prevent lamps being damaged from shotfiring.

152. **Electric lighting in gassy mines.**—Subject to the provisions of Indian Electricity Rules, 1956 relating to the use of electric energy in parts of mines in which inflammable gas is likely to occur in quantity sufficient to be indicative of danger, electric lighting from a source of supply external to the lighting unit may be used—

- (a) on any roadway or place ventilated by intake air; and

(b) on any other roadway or place not within 270 metres of the nearest face.

(2) In every mine or part thereof to which regulation 144 applies, every electrical lighting apparatus shall be of a type approved by the Chief Inspector:

Provided that electric lighting from a source of electric power enclosed in the lighting unit, electric lights which are fittings or accessories to machinery or electrical plant (including signalling apparatus), and any other means of lighting not specifically mentioned in this regulation, may be used in the mine if so permitted by the Chief Inspector by an order in writing and subject to such conditions as he may specify therein.

153. Every person to carry a light.—(1) The owner, agent or manager shall provide every person employed belowground with a light or lamp adequate to enable him to perform his duties in a proper and thorough manner; and no such person shall proceed or remain belowground without such light or lamp. On his return to the surface, every such person shall, unless otherwise directed by the manager by a general or special order in writing, immediately return his lamp to the lamp-room.

(2) The number of safety lamps at every mine shall be adequate to permit thorough cleaning and checking before they are issued. If any doubt arises as to the sufficiency or otherwise of the safety lamps provided at a mine, it shall be referred to the Chief Inspector for decision.

154. Standards of lighting.—(1) If any doubt arises as to whether any lamp or light is of adequate lighting performance or not, it shall be referred to the Chief Inspector for decision.

(2) The Chief Inspector may, from time to time, by notification in the Official Gazette, specify—

(a) the type of lamp to be provided to any specified categories of persons employed in a mine; or

(b) the standard of lighting to be provided in any specified areas or places in a mine.

155. Maintenance and examination of safety lamps.—In every mine or part thereof in which the use of safety lamps is for the time being required by or in pursuance of the regulations, the following provisions shall have effect, namely—

(1) A competent person appointed for the purpose shall clean, trim, examine and lock securely all such lamps before they are issued for use, and no such lamp shall be issued for use unless it is in safe working order and securely locked.

(2) A competent person appointed for the purpose shall examine every safety lamp at the surface immediately before it is taken belowground for use; and shall assure himself, as far as practicable from external observation, that such lamp is in safe working order and securely locked. The person so appointed shall not perform any other duties other than those prescribed under regulation 147(2).

(3) A competent person appointed for the purpose shall examine every safety lamp on its being returned after use. If on such examination, any lamp is found to be damaged or misused, he shall record the nature of the damage or misuse in a bound paged book kept for the purpose. Every such entry shall be countersigned and dated by the manager.

(4) The manager, undermanager or assistant manager, or a competent person appointed for the purpose shall, once at least in every seven days, examine thoroughly every safety lamp in use, and shall record the result of examination of every such lamp in a bound paged book kept for the purpose.

(5) No person shall be appointed as a competent person under this regulation unless he holds a Manager's, Overman's or Gas-testing Certificate.

156. Use of safety lamps.—(1) Every safety lamp shall be numbered; and so long as the lamp is in use, the number thereof shall be maintained in a legible condition.

(2) A competent person appointed for the purpose shall maintain a correct record of the lamps issued from and returned to the lamp-room; and in the record so maintained, the number of the lamp issued to any person shall be entered against his name.

(3) If any person returns to the lamp-room a lamp other than the one issued to him, he shall explain the cause and circumstances of the change.

(4) No unauthorised person shall either himself take, or give out, any safety lamp from the lamp-room.

(5) Every person who receives a lamp shall satisfy himself that it is complete and in good order; and should he find any defect therein, he shall immediately return it to the lamp-room.

(6) No person shall wilfully damage or improperly use, or unlock or open, or attempt to unlock or open any safety lamp.

(7) Should any person find that the safety lamp in his possession has become defective, he shall at once carefully extinguish the flame, if any, and report the fact to his superior official.

157. Maintenance and repairs of safety lamps.—(1) Every safety lamp shall be properly assembled and maintained in good order. If any lamp is found to be defective or damaged, it shall not be issued for use until the defect or damage has been remedied.

(2) If any wire or any gauze of a flame safety lamp is broken or burnt away, the gauze shall not be reconditioned for further use.

(3) Damaged and defective gauzes, glasses and other parts of a safety lamp shall not be kept or stored in the safety lamp-room.

(4) No glass of a safety lamp, and no bulb of an electric safety lamp, shall be replaced except by a glass or bulb of such types as the Chief Inspector may, from time to time, specify by notification in the Official Gazette; and no other part of a safety lamp (other than a wick or battery, as the case may be) shall be replaced except by a part manufactured by the manufacturers of the lamp to approved specifications. No repaired part shall be used in a safety lamp.

(5) In every flame safety lamp kept for the purpose of inspection or of testing for or detecting the presence of inflammable gas, no oil other than an oil of a type approved by the Chief Inspector shall be used.

158. Precautions to be taken in safety lamp-rooms.—(1) No unauthorised person shall enter the safety lamp-room.

(2) No person shall smoke in the safety lamp-room.

(3) Where petrol, benzol or any other highly volatile spirit is used in safety lamps, the following precautions shall be observed—

(a) lamps shall be cleaned, refitted and refilled in a separate room;

(b) only such quantity of volatile spirit as is required for one working day shall be kept in any such room;

(c) internal relighters shall not be taken out of lamps and cleaned, repaired or refitted on the same table where lamps are cleaned, refitted or refilled; and

(d) adequate number of suitable fire extinguishers shall be provided and kept ready for use in every such room.

CHAPTER XIV—EXPLOSIVES AND SHOTFIRING

159. Type of explosives to be used in mines.—(1) No explosives shall be used in a mine except that provided by the owner, agent or manager. The explosives provided for use shall be of good quality and, as far as can be known, in good condition.

(2) No liquid oxygen explosive shall be used in any workings belowground.

160. Storage of explosives.—(1) No owner, agent or manager shall store, or knowingly allow any other person to store, within the premises of a mine any explosives otherwise than in accordance with the provisions of the rules made under the Indian Explosives Act, 1884.

(2) Explosives shall not be taken into or kept in any building except a magazine duly approved by the Licencing Authority under the Explosives Act:

Provided that the Regional Inspector may, by an order in writing and subject to such conditions as he may specify therein, permit the use of any store or

premises specially constructed at or near the entrance to a mine, for the temporary storage of explosives intended for use in the mine or of surplus explosives brought out of the mine at the end of a shift.

(3) Explosives shall not be stored below ground in a mine except with the approval in writing of the Chief Inspector and subject to such conditions as he may specify therein. Such storage shall be done only in a magazine or magazines duly licenced in accordance with the provisions of the rules made under the Indian Explosives Act, 1884.

(4) Every licence granted by the Licencing Authority for the storage of explosives, or a true copy thereof, shall be kept at the office of the mine.

161. Cartridges.—(1) No explosive, other than a fuse or a detonator, shall be issued for use in a mine, or taken into or used in any part of a mine, unless it is in the form of a cartridge. Cartridges shall be used only in the form in which they are received.

(2) The preparation of cartridges from loose gunpowder, the drying of gunpowder and the reconstruction of damp cartridges shall be carried out by a competent person and only in a place approved by the Licencing Authority and in accordance with the rules made under the Indian Explosives Act, 1884.

162. Magazines, stores and premises to store explosives.—(1) Every magazine or store or premises, where explosives are stored shall be in charge of a competent person who shall be responsible for the proper receipt, storage and issue of explosives.

(2) Explosives shall not be issued from the magazine unless they are required for immediate use. If any explosives are returned to the magazine or store or premises, they shall be re-issued before fresh stock is used.

(3) Explosives shall be issued only to competent persons upon the written requisition signed by the shotfirer or by an official authorised for the purpose and only against their signature or thumb impression. Such requisition shall be preserved by the competent person in charge of the magazine or store or premises.

(4) The competent person in charge of the magazine or store or premises shall maintain, in a bound paged book kept for the purpose, a clear and accurate record of explosives issued to each competent person and a similar record of explosives returned to the magazine or store or premises.

163. Cases and containers for carrying explosives.—(1) No explosives shall be issued from the magazine or taken into any mine except in a case or container of substantial construction and securely locked. Cases or containers made of iron or steel shall be heavily galvanised; and no case or container provided for carrying detonators shall be constructed of metal or other conductive material.

(2) No detonator shall be kept in a case or container which contains other explosives, materials or tools; and two or more types of detonators shall not be kept in the same case or container:

Provided that nothing in this sub-regulation shall restrict the conveyance of primer cartridges fitted with detonators in the same case or container for use in a wet working or in a sinking shaft.

(3) No detonator shall be taken out from a case or container unless it is required for immediate use.

(4) No case or container shall contain more than five kilogrammes of explosives; and no person shall have in his possession at one time in any one place more than one such case or container:

Provided that the Chief Inspector may, by an order in writing and subject to such conditions as he may specify therein, permit the carrying of a larger quantity of explosives in a single case or container, or the use, at one time in one place, of more than one such case or container.

(5) Every case or container shall be numbered; and as far as practicable, the same case or container shall be issued to the same shotfirer or competent person, as the case may be, every day.

(6) The key of every case or container shall be retained by the shotfirer in his own possession throughout his shift.

164. Transport of explosive.—(1) Where explosives are being carried on a ladder, every case or container shall be securely fastened to the person carrying it.

(2) No person other than a shotfirer shall carry any priming cartridges in to a shaft which is in the course of being sunk. No such cartridge shall be so carried except in a thick felt bag or other container sufficient to protect it from shock.

165. Reserve stations.—No case or container containing explosives shall be left or kept belowground except in a place appointed by the manager for the purpose and so situated that it is not frequented by workpersons. Every such place shall be free of any overhang; and shall be kept clean, adequately fenced, and legibly marked 'RESERVE STATION'.

166. Shotfirers.—(1) The preparation of charges and the charging and stemming of holes shall be carried out by or under the personal supervision of a competent person, in these regulations referred to as a "shotfirer". The shotfirer shall fire the shots himself.

(2) No person shall be appointed to be a shotfirer unless he is the holder of a Manager's, Overman's, Sirdar's or Shotfirer's Certificate.

(3) If 30 or more persons are employed belowground at any one time in any mine or district under the charge of a competent person appointed under regulation 113, such person shall not be appointed to perform the duties of a shotfirer.

(4) No person whose wages depend on the amount of coal, rock or debris obtained by firing shots, shall be appointed to perform the duties of a shotfirer.

(5) The manager shall fix, from time to time, the maximum number of shots that a shotfirer may fire in any one shift; and such number shall not, unless the Regional Inspector by an order in writing and subject to such conditions as he may specify therein, otherwise permits, exceed 50, and shall be based upon—

- (i) the time normally required to prepare or fire a shot in accordance with the provisions of these regulations;
- (ii) the time required for that shotfirer to move between places where shots are fired;
- (iii) the assistance, if any, available to him in the performance of his said duties; and
- (iv) any other duties assigned to him, whether statutory or otherwise:

Provided that where the Regional Inspector is of the opinion that it is necessary for the proper observance of the provisions of the regulations that the number of shots so fired shall be reduced, and by an order in writing so requires, the manager shall fix a lower maximum number of shots as specified by the Regional Inspector.

(6) The number of detonators issued to, and in the possession of, a shotfirer during his shift shall not exceed the maximum number of shots that he is permitted to fire under sub-regulation (5).

167. Shotfiring tools.—(1) Every shotfirer on duty shall be provided with—

- (a) a suitable electric lamp or torch, and a stop watch;
- (b) a tool, made entirely of wood, suitable for charging and stemming shotholes;
- (c) a scraper made of brass or wood suitable for cleaning out shotholes;
- (d) where fuses are used, a knife for cutting off fuses and, unless machine-capped fuses are provided, also a pair of suitable crimpers for crimping detonators;
- (e) where detonators are used, a pricker made of wood or of a non-ferrous metal for priming cartridges; and
- (f) in a mine to which regulations 122(2) and 144 apply, a tool of a type approved by the Chief Inspector for detecting cracks.

(2) No tool or appliance other than that provided as above shall be used by a shotfirer.

168. Drilling, charging, stemming and firing of shotholes.—(1) No drill shall be used for boring a shothole unless it allows a clearance of at least 0·3 centimetres over the diameter of the cartridge of explosive, which it is intended to use.

(2) No shothole shall be charged before it is thoroughly cleaned.

(3) Before any shothole is charged, the direction of the hole shall, where practicable, be distinctly marked on the roof or other convenient place.

(4) No detonator shall be inserted into a priming cartridge until immediately before it is to be used; so however that in case of wet workings, priming cartridges may be prepared at the nearest convenient dry place; and such primed cartridges shall be carried to the working place in a securely closed case or container. Detonators once inserted into a priming cartridge, shall not be taken out.

(5) The charge in any shothole shall consist of one or more complete cartridges of the same diameter and the same type of explosive.

(6) The shotfirer shall, to the best of his judgment, ensure that no charge in a shothole is overcharged or under-charged, having regard to the task to be performed.

(7) No shot shall be fired by a fuse less than 1·2 metres in length.

(8) Every shothole shall be stemmed with sufficient and suitable non-inflammable stemming so as to prevent the shot from blowing out. Only sand loosely filled in, or soft clay lightly pressed home, or a compact mixture of sand and clay, or water, shall be used as stemming. In no case shall coal dust be used for purposes of stemming.

(9) In charging or stemming a shothole, no metallic tool, scraper or rod shall be used; and no explosive shall be forcibly pressed into a hole of insufficient size.

(10) No shot shall be fired except in a properly drilled, charged and stemmed shothole.

(11) Blasting gelatine or other high explosives shall not be lighted in order to set fire to fuses.

(12) All surplus explosives shall be removed from the vicinity of a shothole before a light is brought near it for the purpose of lighting the fuse.

(13) As far as practicable, a shot shall be fired by the same shotfirer who charged it.

(14) In any mine in which explosives other than gunpowder are used, every shot shall, if so required by the Regional Inspector, be fired electrically.

(15) Except in a stone drift or a sinking shaft, not more than 10 shots shall be fired in any one round. Where more than six shots are to be fired in one round, they shall be fired electrically.

(16) No shothole shall be charged except those which are to be fired in that round; and all shotholes which have been charged shall be fired in one round.

(17) Where a large number of shots has to be fired, shotfiring shall, as far as practicable, be carried out between shifts.

(18) No person shall attempt to remove any stemming, or pull out any detonator lead, or remove any explosive, from a shothole either before firing or after a misfire, or bore out a hole that has once been charged, or deepen or tamper with empty holes or sockets.

169. Electric shotfiring.—Where shots are fired electrically, the following additional provisions shall have effect namely:—

(1) (a) No shot shall be fired except by means of a suitable shotfiring apparatus; and the number of shots fired at any one time by the apparatus shall not exceed the number for which it is designed.

(b) Every electrical shot-firing apparatus shall be so constructed and used that:—

- (i) it can only be operated by a removable handle or plug. This handle or plug shall not be placed in position until a shot is about to be fired and shall be removed as soon as a shot has been fired; and
- (ii) the firing circuit is made and broken either automatically or by means of a push-button switch.

(c) (i) No apparatus shall be used which is defective; and every apparatus shall, once at least in every three months, be cleaned and thoroughly overhauled by a competent person.

(ii) If the apparatus fails to fire all the shots in a properly connected circuit, the shotfirer shall return the apparatus to the manager, under-manager or assistant manager as soon as possible; and it shall not be used again unless it has been tested on the surface and found to be in safe working order.

(iii) The result of every overhaul, test or repair as aforesaid shall be recorded in a bound paged book kept for the purpose, and shall be signed and dated by the person making the overhaul, test or repair.

(3) No current from a signalling, lighting or power circuit shall be used for firing shots.

(4) The shotfirer shall:—

- (a) retain the key of the firing apparatus in his possession throughout his shift;
- (b) use a well-insulated cable of sufficient length to permit him to take proper shelter, and in no case shall the cable be less than 18 metres long;
- (c) before coupling the cable to the firing apparatus, couple up the cable himself to the detonator leads;
- (d) take care to prevent the cable from coming into contact with any power or lighting cable or other electrical apparatus;
- (e) take adequate precautions to protect electrical conductors and apparatus from injury;
- (f) himself couple the cable to the firing apparatus; and before doing so, see that all persons in the vicinity have taken proper shelter as provided under regulation 170; and
- (g) after firing the shots and before entering the place of firing, disconnect the cable from the firing apparatus.

(5) When more than one shot are to be fired at the same time:—

- (a) care shall be taken that all connections are properly made;
- (b) all shots if fired belowground, shall be connected in series;
- (c) the circuit shall be tested, either for electrical resistance or for continuity, before connecting it to the firing apparatus. Such a test shall be made with an apparatus specifically designed for the purpose and only after all persons in the vicinity have taken proper shelter as provided under regulation 170; and
- (d) the cable to the shotfiring apparatus shall be connected last.

170. Taking shelter etc.—(1) The shotfirer shall, before a shot is charged, stemmed or fired, see that all persons in the vicinity have taken proper shelter. He shall also take suitable steps to prevent any person approaching the shot and shall himself take adequate shelter:

Provided that in an opencast working, the shot-firer shall give sufficient warning, by an efficient system of signals or by other means approved by the manager, over the entire area of the danger zone, that is to say, an area of ground falling within a radius of 300 metres from the place of firing.

(2) where the workings, either open or belowground, offer insufficient protection against flying fragments or missiles, adequate shelters or other protection shall be provided.

(3) When two working places below ground have approached within 4.5 metres of each other, the shotfirer shall not fire any shot in any one of the said workings unless all persons have been withdrawn from the other working place and the same has been so fenced off as to prevent persons inadvertently coming in direct line of the shot.

171. Precautions against dry coal dust.—No shot shall be fired at any place belowground unless the place itself and all accessible places, including the roof and sides, within a distance of 18 metres—

- (a) are naturally wet; or
- (b) have been drenched with water to such an extent that there is no danger of dry coal dust being raised into the air by the shot; or
- (c) have been thoroughly treated with incombustible dust in the manner required in regulation 123(5).

172. Conditions requiring use of Permitted Explosives.—(1) Notwithstanding anything contained in the regulations, two or more shots shall not be charged or fired in the same place simultaneously belowground if the explosive used is not a Permitted Explosive, except in—

- (a) a working place in which the roof, floor and sides within a radius of 18 metres of the place where shots are to be fired are naturally wet; or
- (b) a stone-drift, if it does not contain dry coal dust; and
- (c) a shaft which is in the course of being sunk.

(2) No explosive other than a Permitted Explosive shall be used—

- (a) in any mine to which regulations 122(2) and 144 apply; and
- (b) in any other mine in every place which is not naturally wet:

Provided that the Chief Inspector may, by an order in writing and subject to such conditions as he may specify therein, permit in any mine or part the use of any explosives other than Permitted Explosives.

(3) In any place belowground where inflammable gas is likely to be liberated by a shot, Permitted Sheathed Explosives or other permitted explosive equally safe, or Cordox or Hydrox shall be used.

173. Precautions in the use of Permitted Explosives.—In any mine in which the use of Permitted Explosives is required under regulation 172—

- (a) no shot shall be fired in coal unless—
 - (i) the coal has been undercut, overcut or sidecut; and
 - (ii) the length of the shothole is at least 15 centimetres less than the depth of the cut.
- (b) no detonator shall be used, unless it is an electric detonator with a copper tube;
- (c) where more shots than one are charged for firing, the shots shall be fired simultaneously; and
- (d) the aggregate charge in any number of shots fired simultaneously in coal shall not exceed such permissible maximum charge, as the Chief Inspector may, by a notification in the Official Gazette, lay down for the kind of Permitted Explosives used.

174. Approved shortfiring apparatus.—Where Permitted Explosives are used under regulation 172, no shot shall be fired except by means of a shot-firing apparatus of a type approved by the Chief Inspector and subject to such conditions as he may from time to time lay down by notification in the Official Gazette:

Provided that where special conditions exist, the Chief Inspector may, by an order in writing and subject to such conditions as he may specify therein, permit the use of any other shot-firing apparatus.

175. Precautions in gassy mines.—In any mine to which regulation 144 applies, the following additional provisions shall have effect, namely—

(1) Notwithstanding anything contained in the regulations, no shot shall be stemmed or fired by any person who does not hold either a Manager's or Overman's Certificate, or a Sirdar's Certificate together with a Gas-testing Certificate.

(2) If in a ventilating district, presence of inflammable gas is detected in any place, no shothole shall be charged, stemmed or fired in that place or in any other place situated on its return side till such place has been cleared of gas and declared safe.

(3) Immediately before charging a shothole or a round of shotholes, and again before firing the shots, the shotfirer shall carefully test for inflammable gas at all places within a radius of 18 metres of the place of firing.

(4) No shothole shall be charged if any break is found therein, or if inflammable gas is found issuing therefrom.

(5) If after charging a shothole, inflammable gas is found in any place within the prescribed radius, no shot shall be fired until the place has been cleared of gas and declared safe.

(6) No delay-action detonator shall be used, except with the previous permission in writing of the Chief Inspector and subject to such conditions as he may specify therein.

176. Inspections after shortfiring.—After a shot has been fired, the shortfirer shall not enter or allow any other person to enter the place until the atmosphere in the area is free from dust, smoke or fumes. He shall, before any other person enters the place, make a careful examination and with his assistants, if any, make the place safe. No other person shall enter the place, and where guards have been posted they shall not be withdrawn, until the examination has been made and the place has been declared safe in all respects. In the case of opencast workings, after shots have been fired, an all-clear signal shall be given except in the case of a misfire.

177. Misfires.—(1) The number of shots which explode shall, unless shots are fired electrically, be counted by the shotfirer and any other competent person authorised for the purpose; and unless it is certain that all the shots have been exploded, no person shall re-enter or be permitted to re-enter the place until 30 minutes after the firing of shots:

Provided that where shots are fired electrically, this interval may be reduced to not less than five minutes after the source of electricity has been disconnected from the cable.

(2) In the event of a misfire, the entrance or entrances to the working place shall be fenced so as to prevent inadvertent access; and no work other than that of locating or relieving the misfired hole shall be done therein until the misfire has been located and relieved. In opencast workings, it shall be sufficient to mark the place of the misfire with a red flag.

(3) In the event of a misfire, a second charge shall not be placed in the same hole.

(4) If the misfire contains a detonator, the leads or fuse thereof shall be attached by a string to the shortfiring cable or some distinctive marker.

(5) Except where the misfire is due to a faulty cable or a faulty connection and the shot is fired as soon as practicable after the defect is remedied, another shot shall be fired in a relieving hole which shall be so placed and drilled in such a direction that at no point shall it be nearer than 30 centimetres from the misfired hole. The new hole shall be bored in the presence of a shotfirer, preferably the same person who fired the shot.

(6) After a relieving shot has been fired, a careful search for cartridges and detonators, if any, shall be made in the presence of the shotfirer, amongst the material brought down by the shot:

Provided that in the case of workings belowground if such cartridge or detonator is not recovered, the tubs into which the material is loaded shall be marked and a further search made on the surface. As far as possible, the search for the detonators and cartridges and the loading of any coal, stone or debris which may contain a detonator, shall be carried out without the aid of tools.

(7) If a misfired hole is not dislodged by a relieving shot, the procedure laid down in sub-regulations (5) and (6) shall be repeated. A misfired hole which cannot be dealt with in the manner so prescribed, shall be securely plugged with a wooden plug, and no person other than a shotfirer, an official or a person authorised for the purpose shall remove or attempt to remove any such plug.

(8) When a misfired shot is not found, or when a misfired shot is not relieved, the shotfirer shall, before leaving the mine, give information of the failure to such shotfirer or official as may relieve or take over charge from him. He shall also record, in a bound paged book kept for the purpose, a report on every misfire, whether suspected, and whether the shothole is relieved or not relieved. It shall be the responsibility of the relieving shotfirer or official also to sign the report, and, to record in the said book the action taken for relieving the misfired shothole.

(9) The shotfirer of the next shift shall locate and blast the misfired hole, but, if after a thorough examination of the place, the place where the misfire was reported to have occurred he is satisfied that no misfire has actually occurred, he may permit drilling in the place.

178. Special precautions in stone drifts.—In stone drifts—

- (a) after shots have been fired, all loose rock shall be removed from the face, and the area lying within a distance of 1.2 metres from the face shall be thoroughly cleaned or washed down with water and carefully examined for the presence of misfires or sockets. Unless the precautions herein specified have been taken, the next round of shots shall not be fired; and
- (b) if any socket is found, it shall be dealt with in the manner prescribed in regulation 177.

179. Duties of shotfirer at the end of his shift.—Immediately after the end of his shift, the shotfirer—

- (a) shall return all unused explosives to the magazine, or where a store or premises is provided under regulation 160, to such store or premises; and
- (b) shall record, in a bound paged book kept for the purpose, the quantity of explosives taken, used and returned, the places where shots were fired and the number of shots fired by him, and misfires, if any. Every such entry shall be signed and dated by him.

180. General precautions regarding explosives.—(1) No person, whilst handling explosives or engaged or assisting in the preparation of charges or in the charging of holes, shall smoke or carry or use a light other than an enclosed light, electric torch or lamp:

Provided that nothing in this sub-regulation shall be deemed to prohibit the use of an open light for lighting fuses.

(2) No person shall take any light other than an electric torch or an enclosed electric lamp into any explosive magazine or store or premises.

(3) No person shall have explosives in his possession except as provided for in these regulations, or secrete or keep explosives in a dwelling house.

(4) Any person finding any explosive in or about a mine shall deposit the same in the magazine or store or premises. Every such occurrence shall be reported to the manager in writing.

CHAPTER XV—MACHINERY AND PLANT.

181. Use of certain machinery belowground.—(1) No internal combustion engine or steam boiler shall be used belowground in a mine except with the permission in writing of the Chief Inspector and subject to such conditions as he may specify therein.

(2) In every mine or part of a mine to which regulation 144 applies, only flame-proof electric apparatus and equipment shall be used belowground unless otherwise provided for under the Indian Electricity Rules, 1956.

182. General provisions about construction and maintenance of machinery.—All parts and working gear, whether fixed or movable, including the anchoring and fixing appliances, of all machinery and apparatus used as or forming part of the equipment of a mine, and all foundations in or to which any such appliances are anchored or fixed shall be of good construction, suitable material, adequate strength and free from visible defect and shall be properly maintained.

183. Apparatus under pressure.—(1) All apparatus, used as or forming part of the equipment of a mine, which contains or produces air, gas or steam at a pressure greater than atmospheric pressure shall be so constructed, installed and maintained as to obviate any risk of fire, bursting, explosion or collapse or the production of noxious gases.

(2) Every air receiver shall be fitted with a safety valve and an air-gauge which shows pressure in excess of the atmospheric pressure.

(3) Before an air-receiver is cased in or put in commission, the engineer or other competent person shall subject it to a hydraulic test at a pressure at least one-and-a-half times the maximum permissible working pressure. A similar test shall be made after every renewal or repair and in any case at intervals of not more than three years. The result of every such test shall be recorded in a bound paged book kept for the purpose and shall be signed and dated by the person carrying out the test.

(4) The supply of air for air-compressors shall be drawn from a source free from dust and fumes.

184. Precautions regarding moving parts of machinery.—(1) Every winch or windlass shall be provided and used with a stopper, pawl or other reliable holder.

(2) Every flywheel and every other dangerous exposed part of any machinery used as, or forming part of, the equipment of a mine shall be adequately fenced by suitable guards of substantial construction to prevent danger; and such guards shall be kept in position while the parts of the machinery are in motion or in use, but they may be removed for carrying out any examination, adjustment or repairs if adequate precautions are taken.

(3) No person shall, or shall be allowed to, repair, adjust, clean or lubricate machinery in motion where there is risk of injury.

(4) No person shall or shall be allowed to shift or adjust a driving belt or rope while the machinery is in motion unless a proper mechanical appliance is provided for the purpose.

(5) No person in close proximity to moving machinery shall wear, or be permitted to wear, loose outer clothing.

(6) No unauthorised person shall enter any engine room or in any way interfere with the engine.

185. Engine rooms and their exits.—Every engine, motor, transformer and battery charging room, and every room in which any inflammable materials are stored shall be kept clean, and be provided with at least two exits. Every such exit shall be properly maintained and kept free from obstruction.

186. Working and examination of machinery.—(1) No machinery shall be operated otherwise than by or under the constant supervision of a competent person.

(2) In every mine to which regulation 144 applies, no person shall be appointed to supervise or operate any electrical machinery, apparatus or appliance other than a telephone or signalling device or an electric lamp or light, unless he holds a Gas-testing Certificate.

(3) Every person in charge of any machinery, apparatus or appliance shall, before commencing work, see that it is in proper working order, and if he observes any defect therein, he shall immediately report the fact to the manager, engineer or other competent person.

(4) Every person in charge of an air-receiver shall see that no extra weight is added to the safety valves and that the permissible pressure of air is not exceeded.

(5) A competent person or persons appointed for the purpose shall, once at least in every seven days, make a thorough inspection of all machinery and plant in use, and shall record the result thereof in a bound paged book kept for the purpose. In respect of electrical machinery and plant, the competent person shall be an engineer or electrician holding qualifications specified in the Indian Electricity Rules, 1956.

CHAPTER XVI—MISCELLANEOUS

187. Fences.—(1) Every tank or reservoir in or about a mine, which has been formed as a result of, or is used in connection with, mining operations, shall be kept securely fenced.

(2) Every fence erected on the surface shall, once at least in every seven days, be examined by a competent person. A report of every such inspection shall be recorded in a bound paged book kept for the purpose, and shall be signed and dated by the person who made the examination.

(3) Any fence, gate or barricade may be temporarily removed for the purpose of repairs or other operations, if adequate precautions are taken.

(4) If any doubt arises as to whether any fence, guard, barrier or gate provided under the regulations is adequate, proper or secure or as to whether the precautions taken under sub-regulation (3) are adequate, it shall be referred to the Chief Inspector for decision.

188. **Notices.**—Where at any place smoking or unauthorised entry is prohibited, notices to that effect shall be posted at conspicuous places at every entrance to the place.

189. **Storage belowground of calcium carbide.**—Calcium carbide shall not be taken or kept belowground until about to be used, except in a secure metal case or container containing not more than half a kilogramme in weight thereof. No person shall have in the mine at any one time more than one such case or container.

190. **General safety.**—No person shall negligently or wilfully do anything likely to endanger life or limb in the mine, or negligently or wilfully omit to do anything necessary for the safety of the mine or of the persons employed therein.

191. **Use of protective equipment.**—Where it appears to the Regional Inspector or the Chief Inspector that any person or class of persons is exposed to undue hazard by reason of the nature of his employment, he may, by a general or special order, require the provision and use of gloves, boots, hard hats, goggles or other protective equipment.

192. **Information about sickness.**—Every official or competent person shall, in case of sickness or of lawful absence, give early and sufficient notice thereof to his superior official or the manager, so that a substitute may be arranged.

193. **Manpower Distribution Plan.**—During the first week of every month, a survey shall be made of the number of persons normally employed in every district and other places belowground in the mine; and a sketch plan showing the results of such a manpower survey, and signed and dated by the manager, shall be kept in the office of the mine and a copy thereof shall be kept with the attendance clerk.

194. **Sirdars and Overmen.**—(1) No person shall be appointed as a competent person under regulations 34, 70, 94, 119(2), 122(5), 136(6), 137(3), 141(2), 143 and 145, unless he is the holder of either an Overman's or a Manager's Certificate.

(2) No person shall be appointed as a competent person under regulations 113, 114, 117(6), 124, 127(5), 141(1) and 142, unless he is the holder of either a Sirdar's or an Overman's or a Manager's Certificate. In case of a mine to which regulations 122(2) and 144 apply, every person holding a Sirdar's Certificate shall also hold a Gas-testing Certificate.

195. **Saving clauses.**—(1) Where under any regulation, a person is required to hold an Overman's Certificate, a literate person holding a Sirdar's Certificate endorsed for gas-testing shall be considered as qualified to carry out the duties thereunder until such date as the Central Government may notify in that behalf in the Official Gazette.

(2) Where under any regulation, a person is required to hold a Gas-testing Certificate, a person holding a Sirdar's certificate endorsed for gas-testing shall be considered as qualified to carry out the duties thereunder until such date as the Central Government may notify in that behalf in the Official Gazette.

196. **Officials to be literate.**—After the coming into force of these regulations, no new person shall be appointed as an official of a mine unless he is literate and is conversant with the language of the district in which the mine is situated or with the language understood by a majority of the persons employed in the mine:

Provided that so much of this regulation as requires a person to be conversant with the language of the district or of the majority of persons shall not apply to managers, undermanagers, assistant managers, engineers and surveyors.

197. **Writing of reports.**—If any person required to make any report is unable to write, he shall be present when his report is written for him, and shall have person writing the report shall certify that it has been read over to the person for whom it was written, and shall sign the certificate and date his signature.

198. Payment of fees.—Any fees payable under these regulations shall be paid directly into the Treasury or a branch of the State Bank of India, and the receipt of the Treasury or Bank shall be sent along with the application to which the fee relates.

199. Place of accident not to be disturbed.—When any accident in a mine results in serious bodily injury to three or more persons or in any loss of life, the place of accident shall not be disturbed or altered before the arrival or without the consent of an Inspector unless such disturbance or alteration is necessary to prevent further accidents, to remove bodies or to rescue persons from danger, or unless discontinuance of work at the place would seriously impede the working of the mine:

Provided that should an Inspector fail to make an inspection within 72 hours of the time of the accident, work may be resumed at the place of the accident.

200. Taking samples from mines.—Where for official purposes, an Inspector considers it necessary to take samples of coal, any rope or other material, the owner, agent or manager shall make over to him such samples in such quantities as he may require.

201. Signing of returns, notices and correspondence.—All returns and notices required under, or correspondence made in connection with, the provisions of the Act and of these regulation and orders made thereunder, shall be signed by the owner, agent or manager of the mine:

Provided that the owner may, by a Power of Attorney, delegate this function to any other specified person.

202. Chief Inspector etc. to exercise powers of the Regional Inspector.—Any powers granted under these regulations to the Regional Inspector may be exercised by the Chief Inspector or a Deputy Chief Inspector or any other Inspector authorised in writing in that behalf by the Chief Inspector.

203. Appeals to the Chief Inspector.—Against an order made by the Regional Inspector under any of these regulations, an appeal shall lie to the Chief Inspector who may confirm, modify or cancel the order. Every such appeal shall be preferred within 15 days of the receipt of the order by the appellant.

204. Appeals to the Mining Boards or the Chief Inspector.—(1) Against any order of the Chief Inspector specified below an appeal shall lie within 20 days of the receipt of the order by the appellant to the Mining Board constituted under section 12 of the Act or, if no Mining Board has been constituted for the area in which the mine or part thereof is situated, to the Central Government:

(i) Original orders passed under proviso to sub-regulation (2) of regulation 31, second proviso to regulation 32, sub-regulation (1) of regulation 100 clauses (a) and (d) of sub-regulation (2) of regulation 104, sub-regulations (1) and (4) of regulation 105, regulation 106, sub-regulation (2) of regulation 107, sub-regulation (1) of regulation 122, sub-regulation (2) of regulation 126 and sub-regulation (3) of regulation 127.

(ii) Orders passed on appeal against Regional Inspector's orders under sub-clause (ii) of clause (b) of sub-regulation (5) of regulation 99, sub-regulations (2) and (6) of regulation 99, clause (c) of sub-regulation (3) of regulation 100, regulation 103, clause (c) of sub-regulation (4) of regulation 118 and clause (b) of sub-regulation (4) of regulation 124.

(2) Every order of the Chief Inspector, against which an appeal is preferred under sub-regulation (1) shall be complied with pending the receipt at the mine of the decision of the Mining Board or of the Central Government, as the case may be:

Provided that the Mining Board or the Central Government, as the case may be, may, on application by the appellant, suspend the operation by the order appealed against pending the disposal of the appeal.

205. Repeal and Saving.—The Indian Coal Mines Regulations, 1926 and the Coal Mines (Temporary) Regulations, 1955 are hereby repealed.

Provided that all acts done or orders issued or certificates, authorisations or permits granted or renewed under any of the said regulations shall be deemed to have been done, issued, granted or renewed under the corresponding provisions of these regulations.

FIRST SCHEDULE

FORM I

[(See Regulations 3, 6, 7, 8)]

Notice of Opening, Closing or Change of name.

From

To

1. The Chief Inspector of Mines in India, Dhanbad, E.R.

2. The Regional Inspector of Mines,

3.

4.

SIR,

I have to furnish the following particulars in respect of (i)

..... at (mine) of

..... (owner).

1. In case of change of name of mine :

Old name of mine date of change

2. (a) Situation of the mine :

Village Police Station

..... Sub-Division (Taluk)

District State

(b) In case of a new mine, particulars of situation of mine :

Post Office Telegraph Office

Railway Station Rest House

(Give distances therefrom) Means of travelling

Present

Previous (iii)

3. (a) Name and Postal address of (ii) :

(i) Owner

(ii) Managing agent, if any

(iii) agent, if any

(iv) Manager

(b) In case of change, date of change

4. (a) Name and qualifications etc. of Manager/Under Manager/Assistant Managers/Engineer/Surveyor(d) whose appointment is terminated/who is appointe(d) .

(b) Date of appointment/termination of appointment(d)

5. Date on which it is intended to open/reopen/abandon/discontinue (iv) the mine

6. Actual date of opening/re-opening/abandonment/discontinuance(iv) of the mine

Yours faithfully,

Signature

Designation : Owner/Agent/Manager.

Date

INSTRUCTIONS

(i) Mention the matter to which the notice refers.

(ii) Need not be filled in if the notice relates to item 4.

(iii) To be filled in only when the notice refers to a change, and only against the item, in respect of which notice is given.

(iv) Delete whatever is not applicable.

FIRST SCHEDULE

FORM II

(See Regulation 4)

Monthly Return for the Month of.....19....

1. { Name of mine
 { Postal address of Mine
2. { Situation of Mine : Place..... District.....
 { State.....
3. { Name of owner
 { Postal address of owner.....
4. { Name of managing agents, if any.....
 { Postal address of managing agents.....
5. { Name of agent, if any.....
 { Postal address of agent.....
6. { Name of manager.....
 { Postal address of manager.....
7. Tables A to D, duly filled in, are attached.

Certified that the information given above/and in Tables A to D below is correct to the best of my knowledge.

Signature

Designation: Owner/Agent/Manager

Date.....

TABLE A : RAISINGS, DESPATCHES AND STOCKS (in Tons)

1. Name of colliery siding or loading point

2. Grade of coal

Size of coal	Stock at the beginning of month	Coal Raised			Colliery consumption (Boilers, Domestic etc.)	Coal used in making coke in colliery	Coke produced	Coal Despatched			Stock at the end of month
		Open cast workings	Workings below ground					By rail	By road	By other means	
			Development districts	Depillaring districts							
I	2	3	4	5	6	7	8	9	10	11	12
Steam . . .											
Slack . . .											
Rubble . . .											
Total, Coal . .											
Hard Coke . .											
Soft Coke . .											

INSTRUCTIONS

1. A SEPARATE RETURN SHOULD BE SUBMITTED IN RESPECT OF EACH GRADE OF COAL PRODUCED.
2. Figures relating to despatches of coal should be given separately in respect of each loading point from which coal was despatched.
3. All figures should be rounded up to the nearest ton.
4. Columns 3, 4 and 5 should include all coal brought to the surface, irrespective of the use to which it may be put.
5. Column 6 should include all coal consumed at or about the colliery in connection with colliery operations (including domestic use and coal taken home by the workers).
6. Column 7 should include all coal used at the Colliery for the purpose of making coke, irrespective of the method used.
7. Adjustment in stocks made, if any, should be clearly indicated by means of foot notes.

TABLE C.—NUMBER OF MAN-DAYS, ETC.

Maximum number of persons employed on any one day during the month.

(i) in workings below ground on.....(a) :
(ii) in all in the mine on (a) :

		Aggregate num- ber of man-days worked (b) (c)	Aggregate number of man-days lost on account of absence (d) (e)				
		Men	Women	Sick- ness	Acci- dent	Leave	Other causes
<i>Below ground :—</i>							
(i) Miners & Loaders	.						
(ii) Others	.						
<i>Opencast Workings :—</i>							
(i) Miners & Loaders	.						
(ii) Others (f)	.						
<i>Above ground—</i>							
Total							

If there is any marked increase or decrease in attendance or absence, please account for it.

INSTRUCTIONS

(a) Give day of the week and the date and month.

(b) The information should cover all persons "employed" in the mine as defined in clause (h) of Section 2 of the Mines Act, 1952, including clerical and subordinate supervisory staff.

(c) Total number of man-days worked should be obtained by adding the daily attendance for the whole month.

(d) Total number of man-days lost by absence should be obtained by adding the daily absences for the whole month.

(e) Absences should include all cases in which a person is "scheduled to work" or is expected to turn up for work, but does not. All permanent employees are to be treated as "scheduled" to work. So far as temporary or casual employees are concerned, a person who attended work during the preceding week should be considered as scheduled to work during the week under consideration unless (i) he has reported his intention to quit, or (ii) his services have been terminated by the management, or (iii) he does not turn up for work during the whole week. A person who has not worked during the preceding week, should be considered as "scheduled to work" only from the day on which he joins work during the week under consideration. Absence due to strike, lockout, lay-off or maternity leave should not be included as absence here.

(f) Persons employed in the removal of overburden should be included amongst 'Other' and not among "Miners and Loaders".

TABLE D:—HOURS OF WORK AND EARNINGS.

Information should be furnished in respect of one complete working week during the month (a).
1. Attendances, man-hours worked and cash earnings.

	Average daily attendance during the week (b)	Aggregate number of man-hours worked during the week (c)	Total cash payments for work done during the week (d)			
			Basic wages	Dearness allowance	Other cash payments (c)	Total
			Rs.	Rs.	Rs.	Rs.
<i>Below Ground :—</i>						
(i) Overmen & Sirdars						
(ii) Miners & Loaders						
(iii) Others						
<i>Opencast Workings :—</i>						
(i) Overmen & Sirdars						
(ii) Miners & Loaders						
(iii) Others { Men						
Women						
<i>Above Ground :—</i>						
(i) Clerical & Supervisory staff						
(ii) Others { Men						
Women						

2. Total estimated value of concessions in kind (g) given during the week : Rs.
3. Normal hours of production shifts

	From	To
1st Shift		
2nd Shift		
3rd Shift		

4. If there is any major change in wages or hours of work as compared to the preceding month please account for the change.

INSTRUCTIONS

(a) The information should cover all persons "employed" as in Table C. Particulars relating to payments etc. to monthly-paid staff should be included on a *pro-rata* basis.

(b) Average daily attendance should be obtained by dividing the aggregate number of attendances on all the shifts on all days during the week by the number of working days. Any day on which the mine did not work, for any cause whatsoever, should not be treated as a working day.

(c) Aggregate number of man-hours worked during the week should be obtained by adding, for the whole week, the number of man-hours worked every day. The number of man-hours worked on a day is obtained by summing up the number of hours worked by each person attending work on each of the shifts during the day, including overtime worked, if any.

(d) Total cash payments should include all remuneration payable (and paid) for work done during the week before making deductions, if any, towards fines, provident fund contributions, etc. Employers' contributions to the provident fund or on account of welfare provisions should not be included. Bonuses not payable for every pay-period should also not be included.

(e) Including over-time payments.

(f) Persons employed in the removal of overburden should be included among "others" and not among "Miners and Loaders".

(g) Concessions in kind (such as supply of food-stuffs etc., free or at subsidised prices) should be estimated in terms of the difference between the monetary value of the food-stuffs etc. at cost price and the value realised by sale at concessional price.

FIRST SCHEDULE

FORM III

(See Regulation 5)

Annual Return for the year ending on the 31st December 19

1. Name of Mine
2. Postal address of Mine
3. Date of opening
4. Date of closing (if closed)
5. Situation of mine

}	District
}	State
6. { Name of Owner
- Postal address of Owner
7. { Name of Managing Agents (if any)
- Postal address of Managing Agents
8. { Name of Agent (if any) as defined in section 2 (c) of the Mines Act, 1952
- Postal address of Agent
9. { Name of Manager
- Postal address of Manager
10. Other superior supervisory staff employed as at the end of the year. (Please give designations and numbers employed)
11. (a) Whether machinery is used ?
- (b) Nature of power used, if any (e.g., electricity, steam, compressed air, etc.).....
12. Tables A to F, duly filled in, are attached.

Certified that the information given above and in Tables A to F below is correct to the best of my knowledge :

Signature
Designation : **Owner/Agent/Manager**
Date

TABLE A: EMPLOYMENT

Maximum number of persons employed on any one day during the year—

(i) in workings below ground on _____ (2):
(ii) in all in the mine on _____ (3):

Classification	Total number of mandays worked during the year by (b)			Number of days worked during the year	Average daily number of persons employed (c)				Total wages or salary bill for the year (d)
	Direct Labour	Contract Labour	Total		Men	Women	Adolescents	Total	
(1)	(2A)	(2B)	(2C)	(3)	(4A)	(4B)	(4C)	(4D)	(4E)
<i>Below ground :</i>									
(i) Overmen & Sirdars									
(ii) Miners & Loaders									
(iii) Others									
<i>Open-cast Workings :</i>									
(i) Overmen & Sirdars									
(ii) Miners & Loaders									
(iii) Others (e)									
<i>Above ground :</i>									
(i) Clerical and supervisory staff (excluding the supervisory staff)									
(ii) Workers in any attached factory, work-shop or mineral dressing plant.									
(iii) Others									
TOTAL									

INSTRUCTIONS.

- Give date of week and the date and month.
- Obtained by adding the daily attendances for the whole year.
- Obtained by dividing the number of man-days worked by the number of working days. The total shown in Column (4D) should agree with the quotient obtained by dividing the total shown in Column (2C) by the number of working days shown in Column (3).
- Includes all cash payments including bonuses, Employers' contributions to provident funds, welfare activities, etc., and concessions in kind should not be included.
- Persons employed in the removal of overburden should be included among "Others" and not among "Miners & loaders".

TABLE B : TYPE AND AGGREGATE HORSE-POWER OF ELECTRICAL APPARATUS

1. Electricity generated, purchased or received other-wise (in kwh)

Generated	Purchased or received
(a) For own use	
(b) For sale	

2. System of supply (whether direct current or alternating current)

- (i) Voltage of supply.
- (ii) Periodicity
- (iii) Source of supply.

3. Voltage at which current is used for :

Above ground	Below ground
(a) Lighting	
(b) Power	

4. Length of cables (in metres)

- (i) High pressure
- (ii) Medium pressure

5. Total number and aggregate horse-power of motors.

In use		In reserve	
Number of units	Total h.p.	Number of units	Total h.p.

(a) Installed above ground for :

- (i) Winding
- (ii) Ventilation
- (iii) Haulage
- (iv) Pumping
- (v) Coal washing, screening or handling plants
- (vi) Workshops including foundry, smithy, etc.
- (vii) Miscellaneous (specify)
-
-

TOTAL

(b) Installed below ground for :

- (i) Haulage
- (ii) Ventilation
- (iii) Pumping
- (iv) Coal-cutting machines
- (v) Other portable machines (drills, etc.)
- (vi) Conveyors, Loaders, Scrapers, etc.
- (vii) Electric Traction (locomotives, etc.)
- (viii) Miscellaneous (specify)
-
-

TOTAL

TABLE C : TYPE AND AGGREGATE HORSE-POWER OF MACHINERY AND EQUIPMENT (Other than electrical apparatus).

	In use		In reserve	
	Number of units	Total h.p.	Number of units	Total h.p.
I. Power generators :				
(a) Boilers				
(b) Steam Turbines				
(c) Diesel Engines				
(d) Gasoline, Gas or Oil Engines other than Diesel Engines				
(e) Hydraulic Turbines or water wheels				
(f) Air Compressors				
TOTAL				
II. Machinery installed above ground for :				
(i) Winding				
(ii) Ventilation				
(iii) Haulage				
(iv) Pumping				
(v) Coal washing, screening or handling plants				
(vi) Workshops including Smithy, Foundry, etc.				
(vii) Miscellaneous (specify)				
TOTAL				
III. Machinery installed below ground for :				
(i) Haulage				
(ii) Ventilation				
(iii) Pumping				
(iv) Locomotives etc.				
(v) Miscellaneous (specify)				
TOTAL				

TABLE D : EXPLOSIVES, SAFETY LAMPS AND MECHANICAL VENTILATORS

1. *Explosives.*

Name of explosive	Quantity used (in Kgm.)	Number of detonators used	
		Electric	Ordinary

2. *Safety Lamps.*

Name and type of safety lamps *	Number of safety lamps according to method of locking.		
	Lead rivet	Magnetic	Other

*Mention type, such as flame type, electric hand type, electric cap type etc.

3. *Mechanical Ventilators.*

Name and size of mechanical ventilator	Position where installed	Average Total quantity of air delivered per minute	Water gauge obtained (in centimetres)

TABLE E : OUTPUT (in tons)

(a) For Coal (including Rubble and Slack)

Grade (a)	Opening stocks on 1st January 19 .	Coal raised (including colliery consumption and coal used for coke making)	Total value of raising (b) (in Rupees)	Total of columns 2 and 3 (c)	Coal despatched (including coal despatched to coke factories, which should be indicated separately)	Colliery consumption (exclusive of coal used for coke making)	Coal used for coking, if any, on colliery	Shortage due to fire, rains and other causes	Closing stocks on 31st December, 19 .	Total — of Columns 6, 7, 8, 9 and 10 (c)
1	2	3	4	5	6	7	8	9	10	11
Selected A.										
Selected B.										
Grade I.										
Grade II.										
Grade III.										
TOTAL										

INSTRUCTIONS

(a) FIGURES SHOULD BE GIVEN SEPARATELY FOR EACH GRADE OF COAL RAISED.

(b) Value means the pit-head value, actual or estimated.

(c) The total in column 5 must be the same as that in column 11.

(b) For Coke

Type of coke	Opening stocks on 1st January 19	Coke manufac- tured	Total value of coke made (a) (in Rupees)	Total of columns 2 and 3 (b)	Coke des- patched	Colliery consump- tion	Shortage if any	Closing stocks, on 31st December	Total of columns 6, 7, 8 & 9(b)
1	2	3	4	5	6	7	8	9	10
Coke (hard)	.	.	.						
Coke (soft)	.	.	.						

INSTRUCTIONS

(a) Value means the ex-mine value.

(b) The total in column 4 must be the same as that in column 9.

TABLE F : LEAVE WITH WAGES AND COMPENSATORY HOLIDAYS.

	Monthly-paid employees	Others
1. Number of persons entitled to leave with wages during the year		
2. Number of persons granted leave during the year		
3. Aggregate number of mandays of leave granted during the year		
4. Total amount paid as leave wages		
5. Number of persons exempted from Section 28 (weekly holidays)		
6. Aggregate number of compensatory holidays earned during the year and carried over from previous year		
7. Aggregate number of compensatory holidays granted		
8. Aggregate number of compensatory holidays due to be granted at the end of year		

FIRST SCHEDULE

FORM IV-A

(See Regulation 9)

Notice of Accident/Occurrence

From _____

To _____

1. The Chief Inspector of Mines in India, Dhanbad, E. Ry.
2. The Regional Inspector of Mines,
3. The Coal Mines Labour Welfare Commissioner, Dhanbad, E. Ry.
4. The District Magistrate/District Collector
5. Electric Inspector of Mines, (in case of electrical accidents only)

Sir,

I have to furnish the following particulars of a fatal accident/ a serious accident/ a dangerous occurrence (a) which occurred at the _____ Mine of _____ (owner)

1. Situation of mine	Mineral worked	Name and postal address of owner		
Village Post Office..... Police Station..... Sub-Division (Taluk)..... District..... State.....				
2. Date and hour of accident/occurrence	Place and location in mine	Number of persons		
		Killed	Seriously injured	
3. Classification of accident/ occurrence (b)	Its cause and description			
4. Name of persons (c)	Nature of employment	Age	Sex	Nature of injury and if fatal, cause of death.
Killed.				
1.				
2.				
3.				
Injured				
1.				
2.				
3.				

Particulars in respect of every person, killed or injured, in Form IV-B are enclosed/shall be forwarded within a week. (b)

Yours faithfully,

Signature

Designation Owner/Agent/Manager.

Date

INSTRUCTIONS

- (a) Delete whatever is not applicable.
- (b) Under one or other of the following heads, namely :
1. Explosion and ignition of inflammable gas and/or coal dust;
 2. Falls of ground :
 - (a) Falls of roof ;
 - (b) Falls of side or face ;
 3. Haulage :
 - (a) Above ground ;
 - (b) Below ground ;
 4. In shafts :
 - (a) Overwinding of cages or other means of conveyance ;
 - (b) Breakage of ropes, chains or drawgear ;
 - (c) While ascending or descending by machinery ;
 - (d) By falling ;
 - (e) By falling objects (excluding falls of ground) ;
 - (f) Miscellaneous ;
 5. Explosives ;
 6. Machinery :
 - (a) Above ground ;
 - (b) Below ground ;
 7. Suffocation by gases ;
 8. Irruption of water ;
 9. Premature collapse of workings ;
 10. Outbreak of fire or spontaneous heating ;
 11. At railway sidings belonging to the mine ;
 12. Electricity ; or
 13. Miscellaneous :
 - (a) Above ground ;
 - (b) Below ground ;
 - (c) In block capital ;

FIRST SCHEDULE

FROM IV-B

(See Regulation 9)

Particulars of Deceased/Injured Person

(To be given separately in respect of every person killed or injured in an accident in the mine).

1. GENERAL :

- (i) Name of mine (ii) Mineral produced.....
 (iii) Owner
 (iv) District (v) State.....

2. NAME OF INJURED WORKER :

3. TIME OF ACCIDENT :

- (i) Date..... (ii) Time..... (iii) Shift.....
 (iv) Number of shifts worked per day at the mine.....
 (v) Time when the worker began work on the day of the accident.....

4. OCCUPATION AND EXPERIENCE OF THE WORKER :

- (i) State the nature of job he was doing at the time of accident.....
 * (ii) Was it his regular occupation=.....
 (a) If yes, state length of experience at the occupation :
 —at your mine.....
 —previous experiences, if any
 (b) If no, state how long employed at this job.....
 (iii) State total experience in mining, coal and non-coal.....
 (iv) Give details of experience in mining work.....

5. PLACE OF ACCIDENT :

- (i) If below ground, state :
 (a) Whether development area or depillaring/stopping area.....
 (b) Number or Name of seam/Vein.....
 (c) Dimensions at the place of accident.....
 (ii) If on surface, state whether on railway, tramway, power plant or elsewhere (to be specified).....
 (iii) If other, state whether open-workings, shaft or elsewhere (to be specified).....

6. NATURE OF INJURY :

- (i) State whether fracture, amputation, laceration, bruise, sprain, crushing injury or other (to be specified).....
 (ii) Part of body injured (to be specified precisely).....

7. DEGREE OF DISABILITY :

- (i) If fatal, date and time of expiry
 (ii) If permanent disablement, specify :
 (a) The part or parts of the body lost, if any.....
 (b) The part or parts of body gone out of use.....
 (c) Whether disablement was total or partial.....
 (iii) If temporary disablement, state number of days forced to remain idle.....

8. RETURN TO DUTY :

- (i) Date when returned to work.....
 (ii) Whether returned to regular job or some other job (to be specified).....

9. RESPONSIBILITY FOR THE ACCIDENT :

- (i) Was any safety provision(s) contravened=.....
 (ii) If so, by whom=.....
 (iii) What action was taken against the offender=.....
 (iv) Could the accident have been avoided=.....
 If so, how?.....

10. COMPENSATION :

State amount of compensation paid or to be paid, if any.....

Signature
 Designation : Owner/Agent/Manager.
 Date

FIRST SCHEDULE

FORM V

(See Regulation 10)

Notice of Disease notified under Section 25

From.....

To.....

1. The Chief Inspector of Mines in India Dhanbad, E R.
2. The Regional Inspector of Mines
3. The Inspector of Mines (Medical), Dhanbad, E.R.
4. The District Magistrate/District Collector.....
5. Coal Mines Welfare Commissioner, Dhanbad, E R.

Sir,

I have to furnish the following particulars with respect to an occupational disease contracted by a person employed in the..... mine of (owner)

1. PARTICULARS OF MINE ETC.

(i) Situation of mine

Village Post Office. Police Station.....
 .. Sub-Division (Talug).....
 District .. State

(ii) Mineral worked.....

(iii) Name and postal address of owner

2 PARTICULARS OF PERSONS AFFECTED

(i) Name (in Block Capitals)

(ii) Caste or surname.

(iii) Permanent address : Village.....
 Police Station
 Post Office
 District
 Sub-Division (Talug).....
 State.....

(iv) Sex

(v) Date of birth (or age).....

(vi) Occupation How long engaged?

(vii) Date of commencement of employment

(a) in your mine

(b) in mining.....

3. PARTICULARS OF DISEASES ETC.

(i) Nature of disease from which the person is suffering (state stage)

(ii) Date of detection of disease

(iii) Name registration number and address of Medical Practitioner suspected

Signature





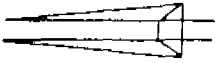
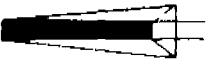
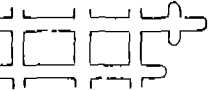




Designation : Owner/Agent/Manager

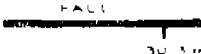
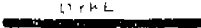
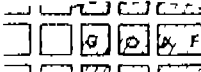
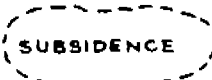

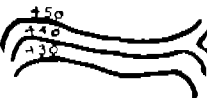
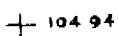

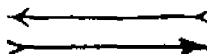
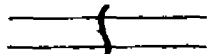


Date.....



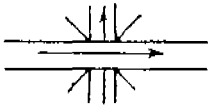
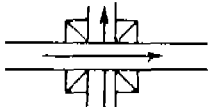




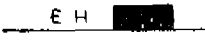



SECOND SCHEDULE

(See Regulation 58)

Conventions for Preparing Plans and Sections.

NAME	SYMBOL	REMARK
BOUNDARY OF LEASE HOLD		IN RED
UNDERGROUND COAL BARRIER		IN GREEN
SHAFT		
ABANDONED SHAFT		
INCLINE		
ABANDONED INCLINE		
PILLARS AND GALLERIES		
DRIFT		IN BURNT SIENNA SHOWING GRADIENT IN BLACK
QUARTERLY SURVEY LINE		
STAPLE SHAFT		IN RED SHOULD STATE THE DISTANCES UP AND DOWN TO ALL INSETS.
ABANDONED STAPLE SHAFT		IN RED.

NAME	SYMBOL	REMARK
FAULT,		IN RED SHOWING THE AMOUNT AND DIRECTION OF THROW
DYKE OR OTHER INTRUSION		IN GREEN
GOAF		
SUBSIDENCE		IN RED
BENCH MARK		
SURFACE CONTOUR		IN BURNT SIENNA
UNDERGROUND SPOT LEVEL		IN BLUE
WATER DAM		IN RED
DIRECTION OF AIR CURRENT		INTAKE IN BLUE RETURN IN RED
BRATTICE		IN RED
DOORS		IN RED
BRICK, STONE OR CONCRETE VENTILATION STOPPING		IN RED

NAME	SYMBOL	REMARK
FIRE DAM, SEAL OR STOPPING		IN RED
EXPLOSION PROOF STOPPING		IN RED
AIR CROSSING		
EXPLOSION PROOF AIR CROSSING		
REGULATOR		IN RED
AUXILIARY FAN		IN RED
TELEPHONE		IN RED
UNDERGROUND FIRST AID STATION		THICK CROSS IN RED
ENGINE HOUSE OR ROOM		
BORE HOLE		15 CM B.H. No 37
SURVEY LINES & STATIONS		
SECTION OF SEAM		SHOULD SHOW SERIAL NUMBER AND DIAMETER

THIRD SCHEDULE

Forms for Systematic Timbering Rules
(See Regulation 108)

FORM 1A

DEPILLARING IN BORD AND PILLAR WORKINGS

1. These rules shall apply to all depillaring areas in _____ district
in _____ colliery.
2. *Support of Goaf Edges :*
Cogs shall be set at all goaf edges at intervals of not more than 3 metres.
OR
Two rows of props shall be set not more than 6 metres apart, at all goaf edges
3. *Support of Working Places :*
(a) Props shall be set at a maximum interval of _____ metres between props in the same row and _____ metres between rows of props in all the area under actual extraction, the front row being not more than _____ metre from the face
(b) Cogs shall be set at all entrances to the areas under extraction, and also at intervals of not more than 3 metres in the areas under actual extraction
(c) Cross-bars shall be set as and when required
4. *Support of Galleries and Splits*
(a) Props shall be set at a maximum interval of _____ metres between props in the same row and a maximum interval of _____ metres between rows of props, in all galleries and splits within a distance of two pillars from the pillar under extraction, or a distance of 30 metres, whichever is greater
(b) Cogs shall be set at all junctions of galleries and splits within a distance of two pillars from the pillar under extraction or a distance of 30 metres, whichever is greater.
5. (a) The lids and wedges used with the props shall have a width not less than the diameter of the prop, a thickness not less than 8 centimetres and a length not less than 0.5 metres
(b) Where floor coal is taken, props shall not be left on coal stumps, and the shorter props shall immediately be replaced with longer props. Where roof coal is taken, the shorter props shall immediately be replaced with longer props and the lip of coal shall be supported with a cog
(c) The timber used in the construction of cogs shall not be less than 12 metres in length and shall have at least two opposite sides joggled flat to provide suitable bearing surfaces.
6. (a) Props shall be set on solid floor and not on loose packing or material. They shall be kept tight against the roof. Where props are to be set on sand, a flat base piece not less than 5 centimetres thick, 25 centimetres wide and 0.75 metre long shall be used
(b) Cross bars shall be supported on props or in 0.5 metre deep holes made in the sides of pillars. Every cross-bar shall be made tight against the roof and if lagging is necessary for the purpose, the number of laggings used on a cross-bar shall not be less than one for every one-metre length of the bar, and the laggings shall be kept tight
(c) Cogs shall be set on solid floor and not on loose packing or materials. They shall be kept tight against the roof to ensure maximum contact between the timber and the roof
7. *Any other provisions .*
8. ADDITIONAL SUPPORTS SHALL BE ERECTED AS AND WHEN NECESSARY

Signature of Manager.

Date_____

FORM IB

LONGWALL WORKINGS.

1. These rules shall apply to all longwall workings in _____
district in _____ colliery.

2. *Support on the face:*

- (a) Props shall be set at a maximum interval of _____ metres between props in the same row and _____ metres between rows of props, the front row being not more than _____ metres from the face.
- (b) Bars/Cogs shall be set at a maximum interval of _____ metres along the face.
- (c) The two ends of the face shall be supported with cogs set at intervals of not more than _____ metres.

3. *Support of levels :*

- (a) The top level or out-bye road shall be supported by _____.
 - (b) The bottom level of in-bye road shall be supported by _____.
4. (a) The lids and wedges used with the props shall have a width not less than the diameter of the prop, a thickness not less than 8 centimetres and a length not less than 0.5 metre.
- (b) Where floor coal is taken, props shall not be left on coal stumps and the shorter props shall immediately be replaced with longer props. Where roof coal is taken, the shorter props shall immediately be replaced with longer props, and the lip of coal shall be supported with a cog.
- (c) the timber used in the construction of cogs shall not be less than 1.2 metres in length and shall have at least two opposite sides joggled flat to provide suitable bearing surfaces.
5. (a) Props shall be set on solid floor and not on loose packing or material. They shall be kept tight against the roof. Where props are to be set on sand, a flat base piece not less than 5 centimetres thick, 25 centimetres wide and 0.75 metre long shall be used.
- (b) Cross-bars shall be supported on props or in 0.5 metre deep holes made in the sides of pillars. Every cross-bar shall be made tight against the roof; and if lagging is necessary for the purpose, the number of laggings used on a cross-bar shall not be less than one for every one-metre length of the bar, and the laggings shall be kept tight.
- (c) Cogs shall be set on solid floor and not on loose packing or materials. They shall be kept tight against the roof to ensure maximum contact between the timber and the roof.

6. *Support by Packwalls or Sand :*

The packs or stowing shall be so advanced that, at no time, the distance between the face and a pack or stowing is more than _____ metres.

7. *Any other provisions:*

8. ADDITIONAL SUPPORTS SHALL BE ERECTED AS AND WHEN NECESSARY.

Signature of Manager.

Date _____

FORM II

OTHER WORKINGS

1. These Rules shall apply to all development workings in _____ district in _____ colliery.
2. All galleries shall be supported with _____
 - (a) Cogs set at a maximum interval of _____ metres.
 - (b) Cross-bars set on cogs/props/sides at a maximum interval of _____ metres along the roof/side ; and
 - (c) Props set at a maximum interval of _____ metres in rows not more than _____ metres apart.
3. All junctions of galleries shall be supported with—
 - (a) Cogs set at a maximum interval of _____ metres.
 - (b) Cross-bars set on cogs/props/sides at a maximum interval of _____ metres.
 - (c) Props set at a maximum interval of _____ metres in rows not more than _____ metres apart.
4. (a) The lids and wedges used with the props shall have a width not less than the diameter of the prop, a thickness not less than 8 centimetres and a length not less than 0.5 metre.
- (b) The timber used in the construction of cogs shall not be less than 1.2 metres in length and shall have at least two opposite sides joggled flat to provide suitable bearing surfaces.
5. (a) Props shall be set on solid floor and not on loose packing or material. They shall be kept tight against the roof.
- (b) Cross-bars shall be supported on cogs, props or in 0.5 metre deep holes made in the side of pillars. Every cross-bar shall be made tight against the roof or sides; and if lagging is necessary for the purpose, the number of laggings used on a cross-bar shall not be less than one for every one-metre length of the bar, and the laggings shall be kept tight.
- (c) Cogs shall be set on solid floor and not on loose packing or materials. They shall be kept tight against the roof to ensure maximum contact between the timber and the roof.
6. Any other provision :
7. ADDITIONAL SUPPORTS SHALL BE ERECTED AS AND WHEN NECESSARY.

Signature of Manager.

Date _____

[No. MI-41(30)/57]

K. N. NAMBIAR, Deputy Secy.

